

62132



STREET LIGHTING CATALOG

GEA-617A



1936-1937

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1936

STREET LIGHTING CATALOG



1936-1937

Discounts from List Prices to

James D. LEE, Jr.

(Name of purchaser)

Subject to standard terms under the following classifications

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Mr. _____
General Electric Representative

Telephone No. _____

_____ Office

GENERAL  ELECTRIC
SCHENECTADY, N.Y.

CATALOG GEA-617A
Supersedes GEA-617

June, 1936

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THIS CATALOG furnishes information on standard types of luminaires and distribution equipment for street lighting. It is not practical to include in a publication of this character the many special designs and special modifications of standard equipment that can be supplied. For complete information refer to the nearest General Electric office.

PRICES

The prices and data given are subject to change without notice. Confirmation of data and prices can be obtained from the nearest office.

The prices are subject to discount and are quoted f.o.b. point of shipment, with freight prepaid to the nearest freight station, subject to percentage additions of the list prices for delivery. This is on the basis that the method and route of shipment be left to the discretion of the General Electric Company. On "express" and "fast freight" shipment additional charges are made. No allowance is made in lieu of freight on collect shipments.

SHIPPING

State distinctly how goods are to be shipped, whether by freight, express, or mail. In order that we may properly send notices of shipments, the post-office address should be specified, especially when it differs from the shipping address.

Since careful attention, by experienced boxers, is given the packing of all equipment, and receipts for delivery in good condition are obtained from the carriers, this Company cannot be held responsible for material lost or damaged in transportation. However, all possible precautions will be taken to prevent injury or delay, and shipments will be traced when requested. All claims for breakage should be presented to transportation companies handling the shipment. We will gladly co-operate with our customers in having such claims adjusted by the carriers.

All claims must be made within ten days of the receipt of goods, and must be accompanied by the package slip that was sent with the shipment.

In referring to orders, always give number and date of your order and our invoice number.

Do not return material of any kind without first communicating with the nearest sales office, obtaining, first, its approval for returning goods; and second, "returned apparatus" tags giving proper shipping directions.

All returned goods should be plainly marked with the name and address of the sender, "returned apparatus" tag attached, and proper notice of shipment, with shipping receipt, sent to the sales office.

We are users of Lcode, the electrical industry telegraph code.

THE ILLUMINATING LABORATORY

OF THE

GENERAL ELECTRIC COMPANY



Testing a new luminaire in the Illuminating Laboratory at Schenectady

THE results of more than fifty years' experience in the art and science of street lighting are embodied in this catalog, and while we are the first to admit that the ultimate is still far ahead, we believe that a careful scrutiny of our products will show that you can save money, reduce operating costs, and give your customers better service by installing General Electric street-lighting equipment.

From the purchase of raw materials to the shipment of the finished product, each step in processing, fabrication, testing, and finishing is checked and rechecked to the end that we can give our customers a product that has long life together with efficient and economical operation.

It is perhaps not widely known that our service starts *before* any material is purchased. For more than thirty years, it has been the practice of the Illuminating Laboratory of the General Electric Company at Schenectady, N. Y., to study the individual requirements of each customer and survey his street-lighting project from the unbiased viewpoint of a consultant. The necessary factual data are assembled and studied by a corps of highly trained experts, and illuminating engineering recommendations are made on the basis of what will most efficiently meet the customer's requirements at the

lowest cost. We have found that this type of service invariably saves the customer money. The many and diverse problems involved in the selection of correct street-lighting equipment cannot be solved economically without a service of this type. General Electric's supremacy in the field of street lighting may justly be said to be largely due to the contributions of the Illuminating Laboratory—contributions based on the accumulated experience of thirty-two years and the application of a profound scientific technique. Research scientists, designing engineers, application engineers, and artists—each one a highly experienced specialist—are constantly engaged in developing better materials, new methods, and improved applications. One of General Electric's latest achievements, the sodium lamp, has received instant and wide recognition as the ideal illuminant for highways, roads, intersections, bridges, and special applications.

The thoroughness with which the Illuminating Laboratory scrutinizes the most minute detail connected with the art and science of outdoor lighting is a measure of the thought and care put into the design and production of General Electric street-lighting equipment.

Take, for example, the glassware. To the uninformed observer, all street-lighting globes look alike—perhaps there are slight differences in contour and surface finish, but that apparently is all. Actually General Electric street-lighting glassware is the product of more than forty years' painstaking research. All the artistry of the Renaissance craftsmen has been reborn in General Electric glassware, but G-E research has given the modern street-lighting globe greatly increased strength and contours designed to give the maximum efficiency in light distribution with consequent lower operating costs. Leading architects design the forms of G-E glassware, while experts closely follow the manufactur-



Comprehensive surveys for street lighting for entire cities are made by the Illuminating Laboratory

ing processes by which these designs are applied, and analyze the ingredients to the end that the purchaser is assured of a product that is efficient, good in appearance, and long-lived. The satisfaction given by an installation of street lighting depends to a great extent on the type of glassware used. Clear, plain glass with its many faults has been definitely discarded by progressive street-lighting engineers and the following factors enter most prominently into the selection of proper glassware:

Form. General Electric glassware is constructed for architectural fitness and beauty as well as utility. The globes are artistically designed to harmonize with the standards or brackets on which they are mounted. Globes must present an artistic appearance in the daytime to aid and enhance the appearance of the street where they are installed; at night, when they become centers of interest, they must create an equally good impression.

Surface Texture. Rippled glassware—a General Electric development—gives an incandescent light source the appearance of sparkling light. The small, irregular, vertical ridges that break up the globe surface into spots of brightness and semibrightness seem to alternate when the lamp is in operation. This gives a scintillating brilliancy to the unit that is entirely lacking when a plain globe is used. General Electric research has accomplished this highly desirable effect with a negligible loss of efficiency in the luminaire.

Maintenance. The expert supervision of processes and high degree of skill with which G-E glassware is manufactured is the purchaser's guarantee against breakage from temperature change and ordinary mechanical shock resulting from careless handling. The rippling is so designed that there are no horizontal flat surfaces on which dirt may collect. An occasional rain serves to keep the globe fairly clean. This self-cleaning characteristic of G-E glassware materially reduces maintenance costs.

We have discussed in some detail the good qualities of G-E glassware and the benefits incidental to the purchase thereof. The same care and precision go into the manufacture of all G-E devices and equipments incidental to a complete street-lighting system. Poles, brackets, luminaires, control devices, transformers, sockets, and cable are all subjected to the most rigid inspection and insistence on the highest standards of material and workmanship. Glassware is cited because it is perhaps the most obvious part of the system and oftentimes the most taken-for-granted.

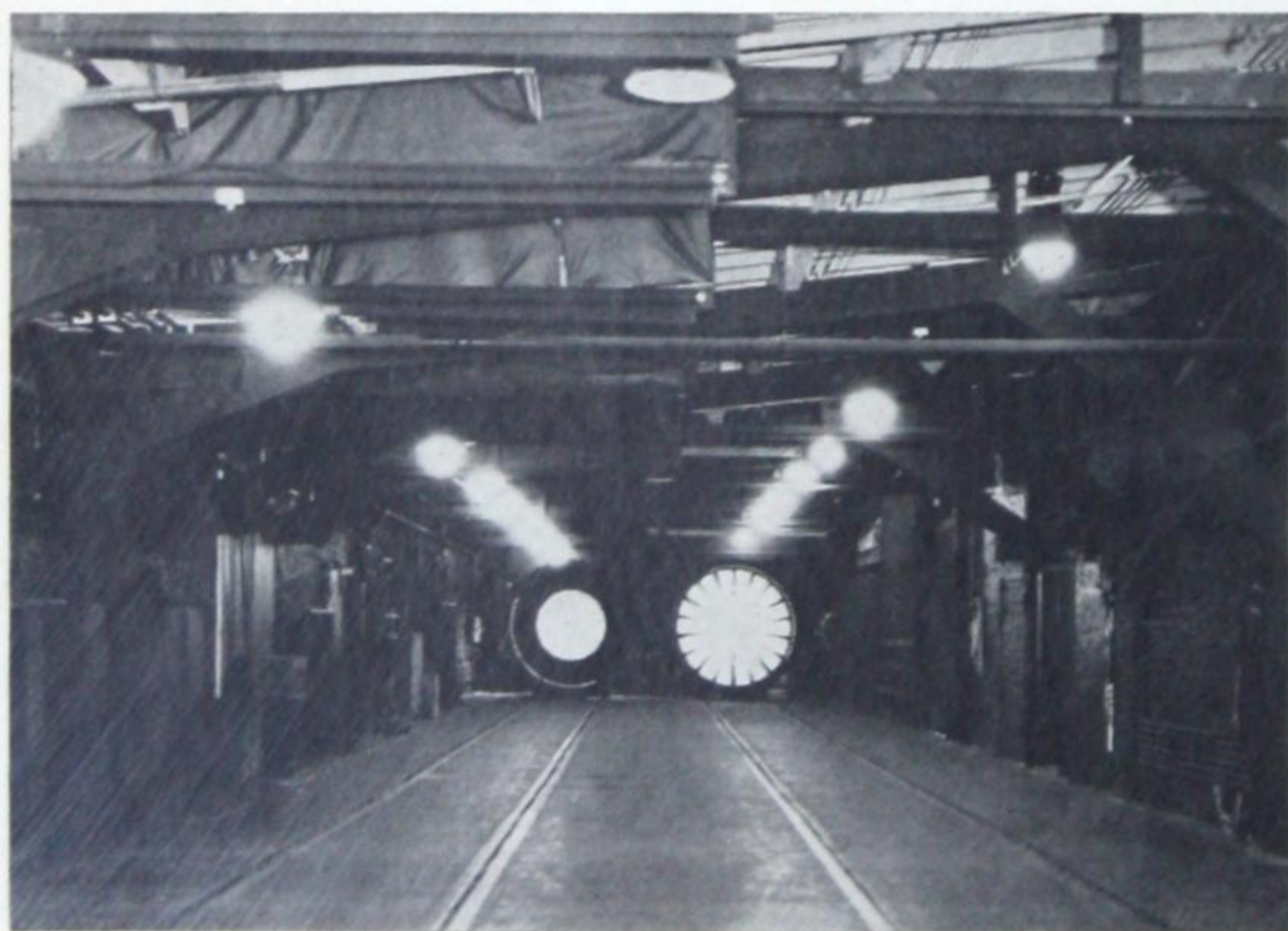
Leading and guiding the art and science of outdoor lighting are the engineers of the Illuminating



Largest integrating hemisphere ever built, located in the Illuminating Laboratory at Schenectady

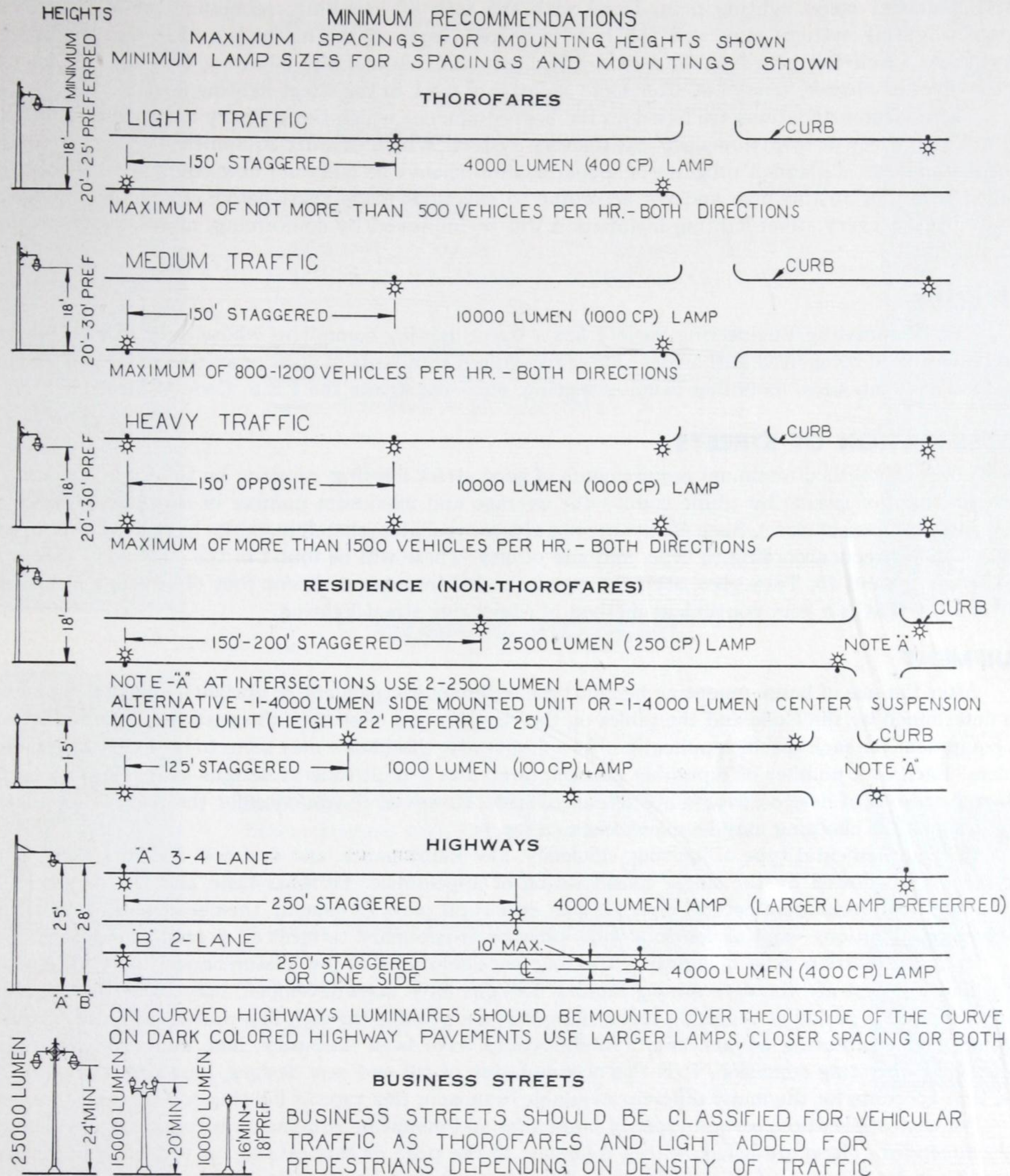
Laboratory of the General Electric Company at Schenectady, New York. It is their responsibility to be constantly in the van of lighting progress, promulgating new ideas, new processes, and new types of luminaires—checking and rechecking, exercising untiring vigilance, taking nothing for granted but submitting all ideas and devices to the unbiased verdict of high-precision instruments—all to the end that purchasers of General Electric street-lighting equipment may receive products of increasingly better performance, which will in turn enable them to give better service at lower cost.

While we believe that General Electric equipment will give our customers the best that human skill and ingenuity can produce, our engineers keep constantly in mind the fact that achievement is but a milestone on the path of progress the end lies ever beyond.



Longest testing range in the world, located in the Illuminating Laboratory at Schenectady

ILLUMINATING ENGINEERING SOCIETY STREET LIGHTING CODE



NOTE:-THESE RECOMMENDATIONS ARE BASED ON THE MOST EFFECTIVE EQUIPMENT USED IN THE MOST EFFECTIVE MANNER : —
 READ I.E.S. STREET LIGHTING CODE FOR DETAILS CONCERNING ABOVE RECOMMENDATIONS.

PRACTICAL STREET LIGHTING

THE practical street-lighting man, faced with the task of installing, rebuilding, or adding to a street-lighting system, may well ask how to choose, from all the methods and equipment in use today, those which will give him the best finished job. On this and the following two pages, General Electric gives its answer, arrived at after some 58 years of work in the street-lighting field.

These recommendations are based on the best equipment which the industry has today; followed, they will give a city or town a modern, satisfactory system. Where existing equipments do not conform to these standards, a planned program of modernization should be laid out; new equipment should be installed according to this plan and not according to selections made years before. In this way, over a period of years, every street-lighting installation will be improved by conforming, more closely, to the ideal plan.

I.E.S. CODE

The Illuminating Engineering Society has a street-lighting committee whose duty it is to collate the opinions of all recognized authorities. These recognized standards of good practice—minimum values of intensities, lamp sizes, mounting heights, spacing, etc.—constitute the I.E.S. Code of Street lighting.

CLASSIFICATION OF STREETS

These established minimum requirements of good street lighting, as given by the Code, are based on classification of streets by traffic count—the average and maximum number of cars passing over a street, and character of street. Such counts are not always available; therefore, tables have been developed which classify streets according to type, and size of city. These will be found in the Addenda, Tables I to VI, pages 14 and 15. They give, also, the recommended lumens per linear foot of street, a measurement of light that is a very convenient method of comparing street lighting.

EQUIPMENT

After the size of lamp, mounting height, type of luminaire (pendent or upright), and spacing have been determined by the Code and the tables on the classification of streets, the next step is to select the best equipment for each specific application. At a first study, this choice may seem to be a very confusing problem. Each of a number of reputable manufacturers has a multitude of designs available, and each of these hundreds of designs has its attractive features. However, if you consider the reasons for these many designs, the choosing may be made much easier.

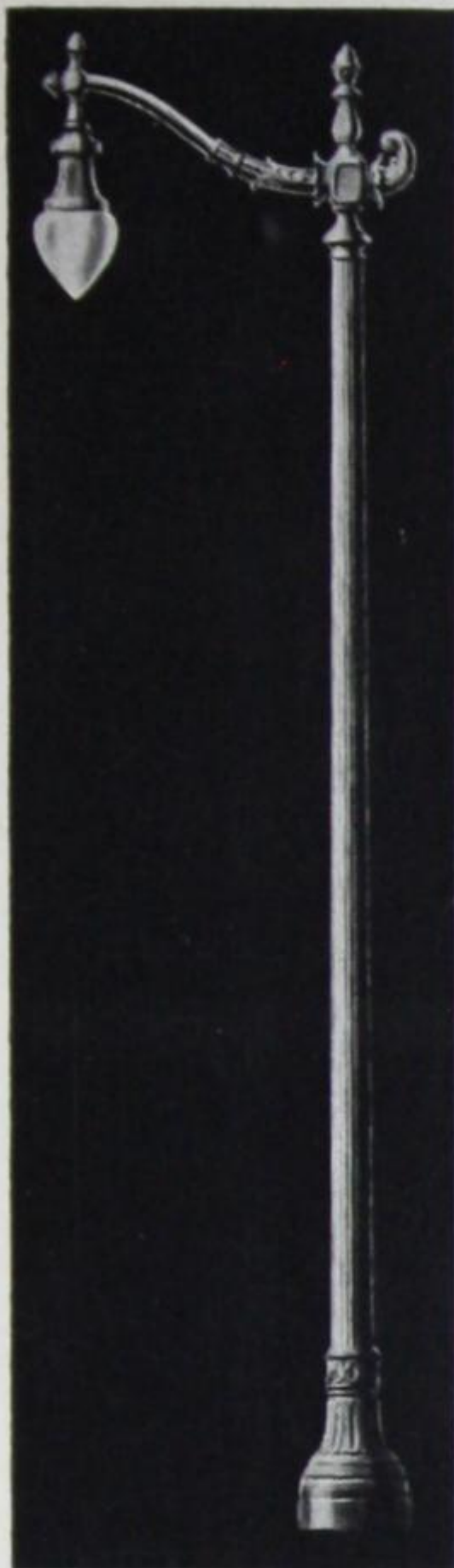
In the ornamental type of lighting, efficiency, low maintenance, and first cost are important, but they are overshadowed by the single consideration of appearance. Personal taste and the demand of harmonizing with local architectural style play an important part. In general, the choice will be dictated by these considerations—and of course a wide selection is necessary to meet all possible conditions.

In the utilitarian type of lighting, the four considerations of low maintenance, high efficiency, safety, and low cost are the determining factors. Designs have been developed, only to be superseded, many times over a period of years, by better designs made possible through new materials, better manufacturing, and engineering advancement. Modifications have been necessary, here and there, to meet some specific operating condition. It is this accumulation of old and new designs, plus special modifications, that accounts for the many different available designs in this type of lighting equipment.

For each application, certain types of luminaires and mounting equipment are superior and should be recommended. These are listed, with a reference to the page in this catalog on which they are described. To make it easy to find these pages, a bleed border similar to that on this page has been added wherever recommended equipment is listed.

Because of space limitations, no attempt is made here to give the reasons for this choice; but an inquiry to the Illuminating Laboratory, General Electric Company, Schenectady, N. Y., or to the G-E street-lighting specialist in your immediate vicinity, will bring you complete details.

PRIMARY AND SECONDARY BUSINESS STREETS



SUSPENSION UNITS

Luminaires—Form 32, with No. 146 globe, page 104.

Standards—A choice of any standard, illustrated pages 38, 40, or 66, depending on personal preference as to appearance.

UPRIGHT UNITS

Luminaires—A choice of any luminaire, illustrated pages 75 to 82 inclusive, depending on personal preference for appearance.

Standards—A choice of any standard, illustrated pages 22 to 35, 46 to 57 and page 62, depending on personal preference for appearance.



TRAFFIC ARTERIES



Luminaires—Form 32, with No. 146 globe and B-Symmetric refractor, page 104, or Form 79-R, page 155.

Standards—Heavy-duty octagonal, page 42.

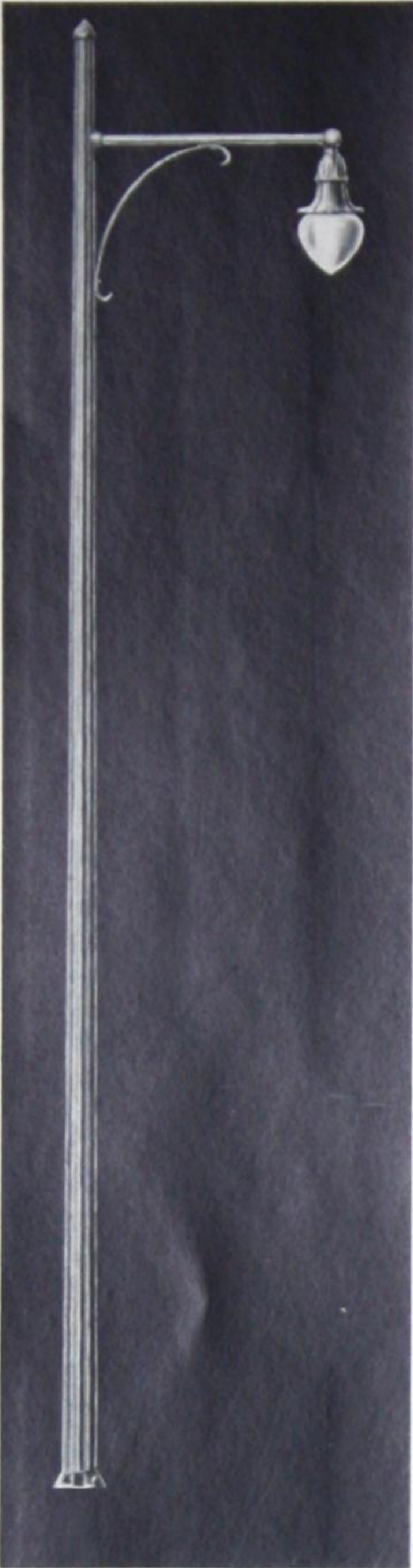
Brackets, Where Mounted on Existing Wood Poles

Ornamental, a choice of designs, page 70.

Utilitarian, 4-ft right-angle bend, page 165.



RESIDENTIAL STREETS—NOT THOROUGHFARES



SUSPENSION UNITS

Luminaires—*High-voltage*—Form 72 with No. 166 globe, and B-Sym-Etric dome refractor, page 151, or Form 32 with No. 146 globe and Sym-Etric dome refractor, page 104.

Low-voltage—Form 79-R, page 155, or Form 32 with No. 146 globe and B-Sym-Etric dome refractor, page 104.

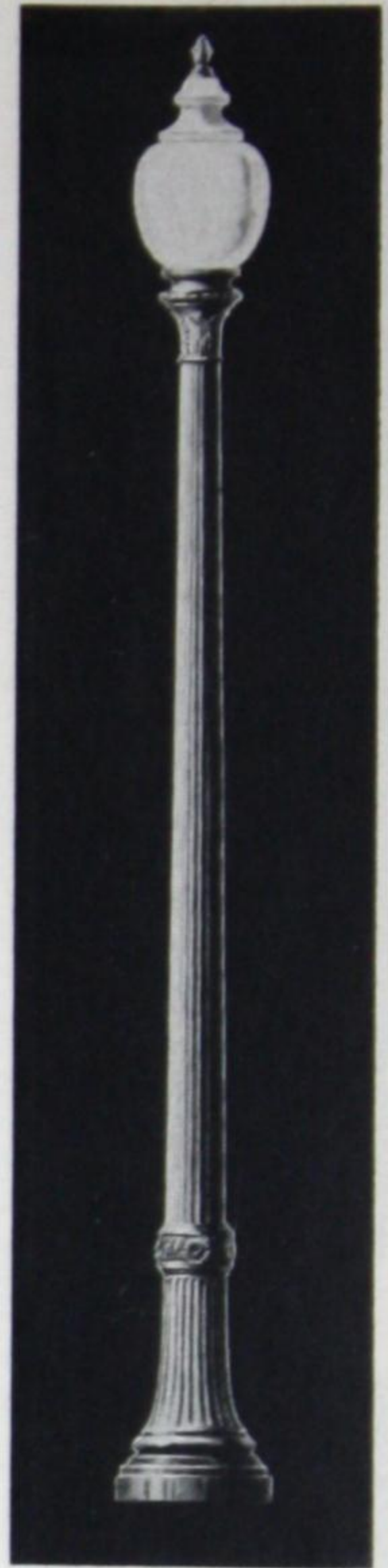
Standards—Octaflute heavy-duty, page 42.

Brackets—4-ft straight (for Form 72) or right-angle bend (for Form 79-R), pages 164 and 165.

UPRIGHT UNITS

Luminaires—A choice of any luminaire, illustrated, pages 75 to 82 inclusive, depending on personal preference as to appearance.

Standards—A choice of any standard, illustrated, pages 22 to 35, 46 to 57 and page 62, depending on personal preference as to appearance.



OUTLYING STREETS

Luminaires—*High-voltage*—Form 72 with radial-wave shading reflector, page 150.

Low-voltage—Form 79-R, page 164.

BRACKETS

4-ft straight (for Form 72) or right-angle bend (for Form 79-R), pages 164 and 165.



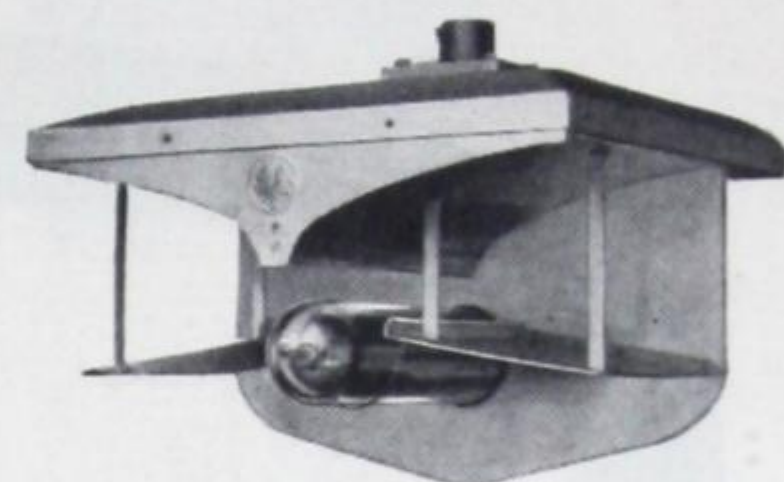
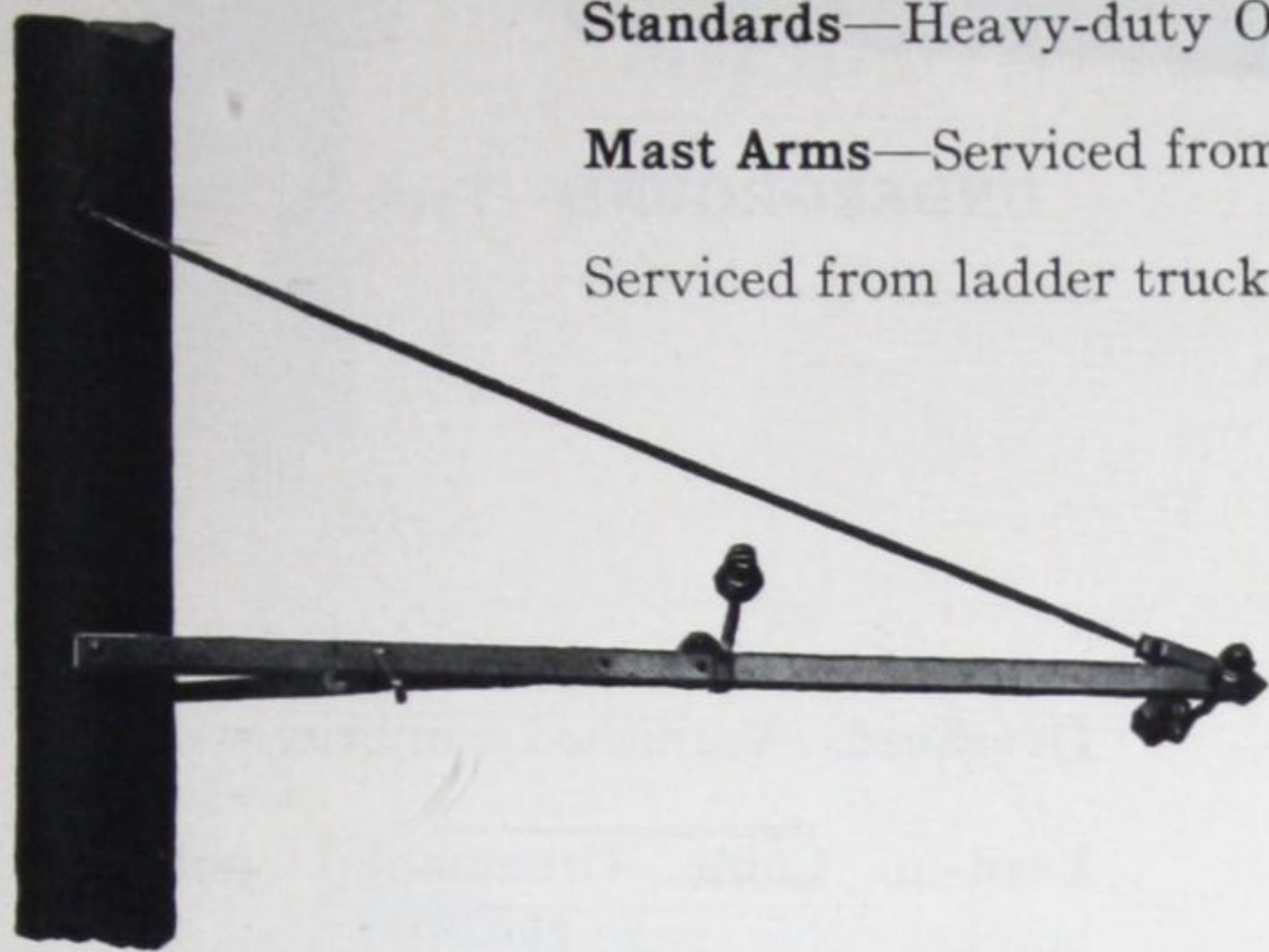
HIGHWAYS

Luminaire—Sodium, page 158.

Standards—Heavy-duty Octaflute, page 42.

Mast Arms—Serviced from pole, trolley-type page 173.

Serviced from ladder truck, channel steel, page 172.



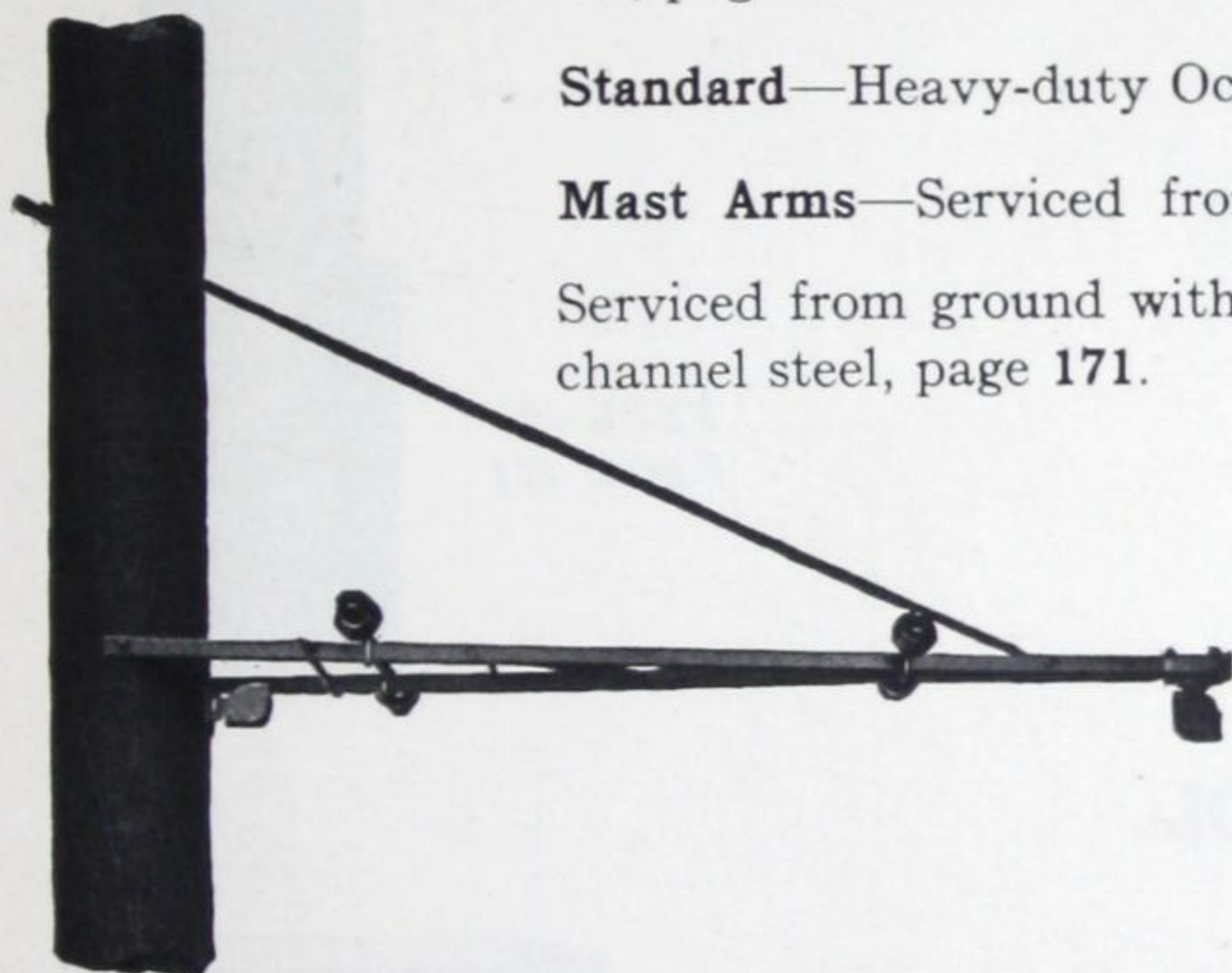
ROADS

Luminaire—Form 72 with concentrating Asy-radial wave reflector, page 150.

Standard—Heavy-duty Octaflute, page 42.

Mast Arms—Serviced from pole, trolley-type, page 173.

Serviced from ground with lamp remover or from ladder truck, channel steel, page 171.



There are several questions that arise so frequently that they should be considered here. Luminaires should be mounted on both sides of the street and, with long spacings, should be staggered.

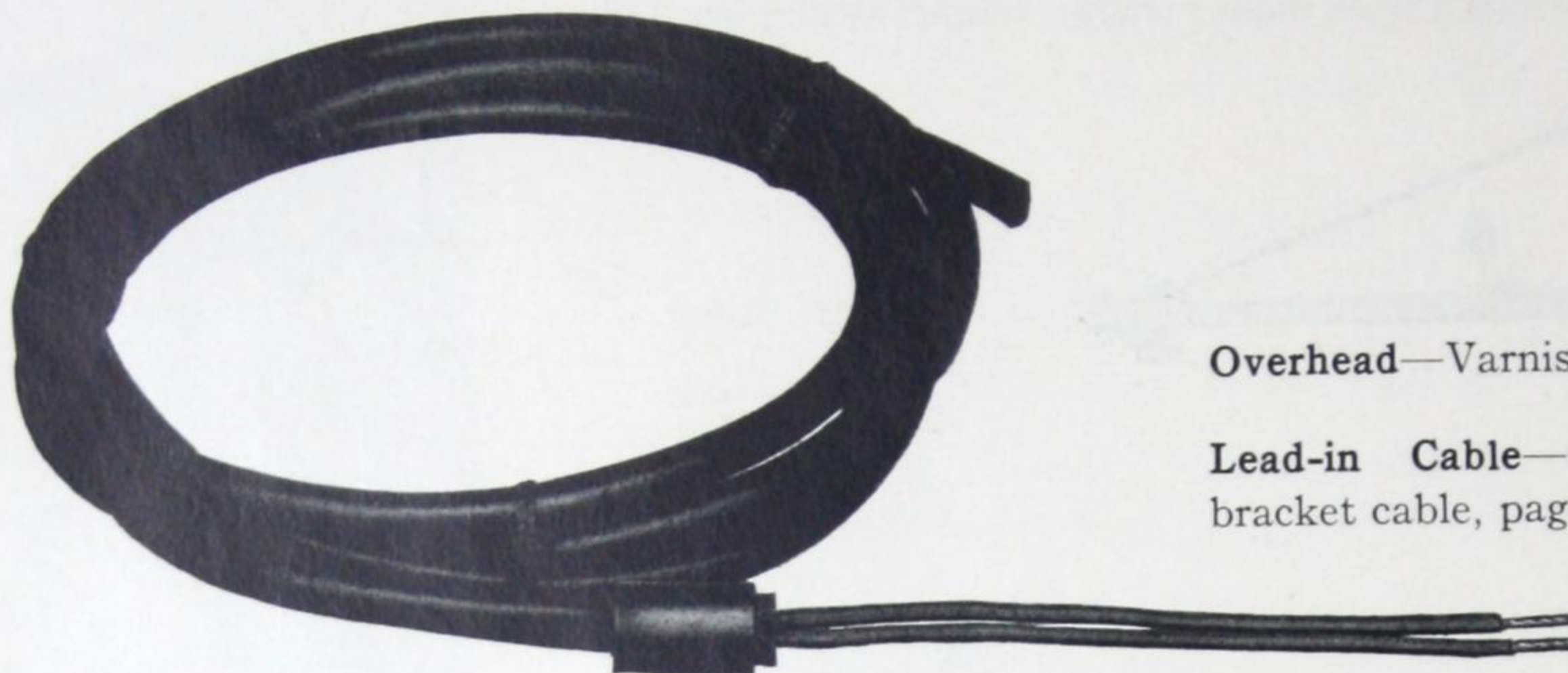
For best visibility they should be mounted from two to four feet over the edge of the roadway. Trees often cause street lights to be mounted over the center of the roadway. This is not at all necessary, and better visibility will result with the luminaires at from two to four feet over the roadway and staggered on both sides of the street. This is true even if the trees shield the luminaires from view of the street, provided they do not cut off the light more than fifteen degrees below the horizontal.

After the luminaires and mountings are chosen, the distribution and control are the next consideration. Following are the recommended equipments with the same limitations as set forth for the luminaires.

CABLE



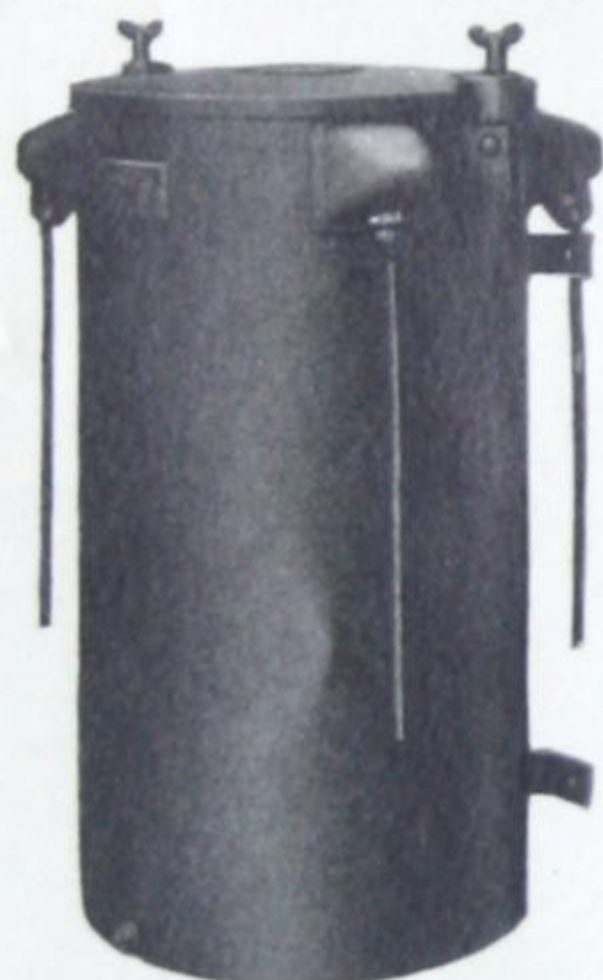
UNDERGROUND—Type RJ, page 292.



Overhead—Varnished cambric.

Lead-in Cable—Ornamental pole and bracket cable, page 299.

TRANSFORMERS

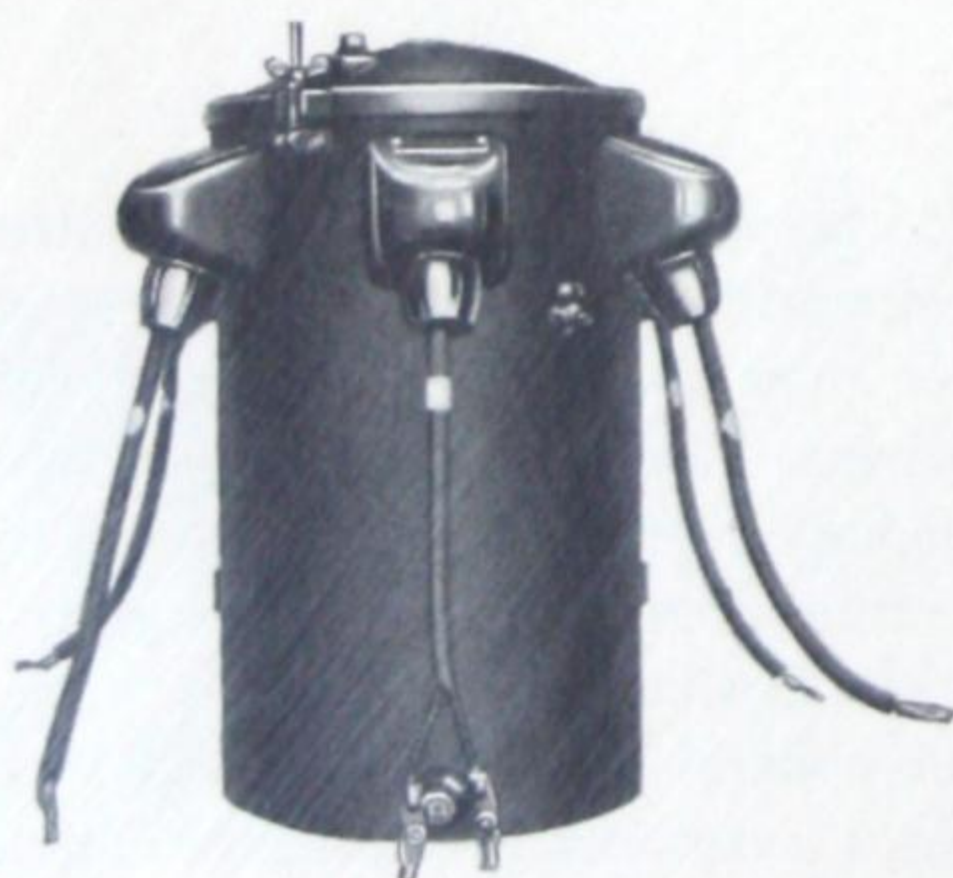


TYPE RO
PAGE 220



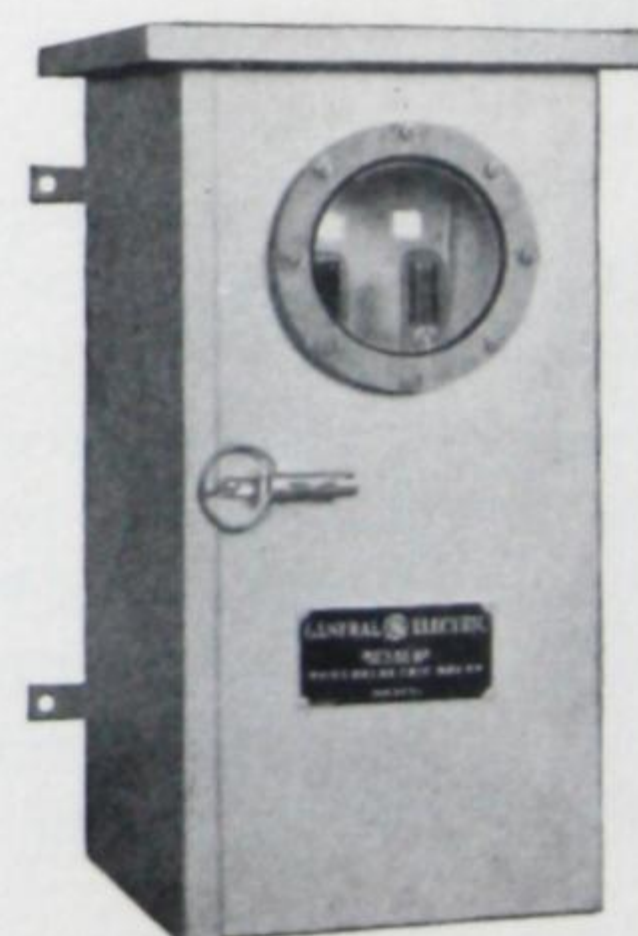
TYPE IL
PAGE 271

CONTROL



NOVALUX
CONTROLLER
PAGE 245

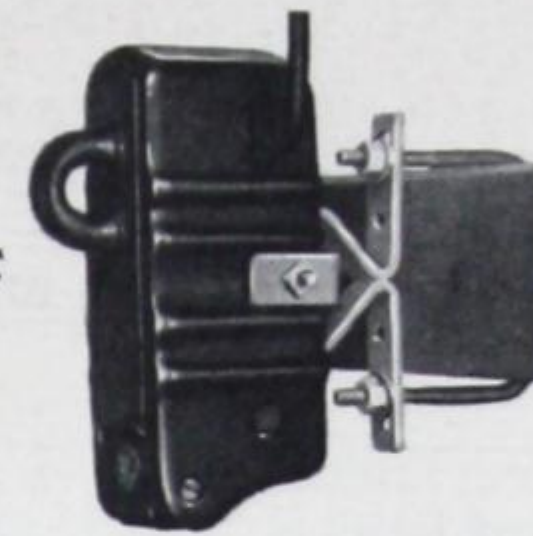
PHOTOELECTRIC
CONTROLLER
PAGE 253



PROTECTIVE DEVICES



*LIGHTNING ARRESTERS
PAGE 235*



*PRIMARY FUSE
CUTOUPS
PAGE 236*



*NOVALUX
PROTECTORS
PAGE 237*



*LOOP SECTIONALIZING
CUTOUPS PAGE 285*

ADDENDA TO PRACTICAL STREET LIGHTING

Table I
Primary Business Streets

ORNAMENTAL LIGHTING, WIRING UNDERGROUND	CLASSIFICATION BY POPULATION		
	More than 100,000	30,000 to 100,000	Less than 30,000
Lumens of Lamps.....	15,000 to 45,000	10,000 to 25,000	6000 to 15,000
Lamps per Standard.....	2	1 or 2	1 or 2
Arrangement of Standards.....	Opposite on wide streets—staggered on narrow.		
Feet of Street per Standard.....	50 to 75	40 to 75	40 to 75
Lumens per Linear Foot.....	600 to 2000	300 to 800	120 to 400
Height of Upright Unit.....	20 to 30	18 to 25	15 to 20
Height of Pendent Unit.....	25 to 30	20 to 30	20 to 25

Table II
Secondary Business Streets

ORNAMENTAL LIGHTING, WIRING UNDERGROUND	CLASSIFICATION BY POPULATION		
	More than 100,000	30,000 to 100,000	Less than 30,000
Lumens of Lamps.....	15,000 — 25,000	10,000 — 15,000	6000 — 10,000
Lamps per Standard.....	1		1
Arrangement of Standards.....	Opposite on wide streets—staggered on narrow.		
Feet of Street per Standard.....	50 to 75	40 to 75	40 to 75
Lumens per Linear Foot.....	300 to 500	150 to 300	60 to 150
Height of Upright Unit.....	15 to 18 ft	15 to 18 ft	15 to 18 ft
Height of Pendent Units.....	20 to 25 ft	20 to 25 ft	20 to 25 ft

Table III
Traffic Arteries

ORNAMENTAL OR SEMIORNAMENTAL LIGHTING, WIRING UNDERGROUND AND OVERHEAD	CLASSIFICATION BY POPULATION		
	More than 100,000	30,000 to 100,000	Less than 30,000
Lumens of Lamps.....	6000 — 15,000	6000 — 10,000	6000
Lamps per Standard.....	1 or 2	1	1
Arrangement of Standards.....	Staggered except on very wide streets.		
Feet of Street per Standard.....	75 to 150	100 to 150	100 to 150
Lumens per Linear Foot.....	60 to 200	40 to 100	40 to 60
Height of Upright Unit.....	15 to 18 ft	15 to 18 ft	15 to 18 ft
Height of Pendent Unit.....	20 to 25 ft	20 to 25 ft	20 to 25 ft

Secondary arteries will usually take the lowest rating.

ADDENDA TO PRACTICAL STREET LIGHTING

Table IV
Residential Streets—Not Thoroughfares

ORNAMENTAL AND SEMIORNAMENTAL LIGHTING, UNDERGROUND AND OVERHEAD WIRING	CLASSIFICATION BY POPULATION		
	More than 100,000	30,000 to 100,000	Less than 30,000
Lumens of Lamps.....	2500 to 6000	2500 to 6000	2500 to 6000
Arrangement of Standards.....	Staggered	Staggered	Staggered
Feet of Street per Standard.....	60 to 150	75 to 200	100 to 200
Lumens per Linear Foot.....	20 to 40	15 to 30	10 to 20
Height of Upright Unit.....	13 to 18 ft	13 to 18 ft	13 to 18 ft
Height of Pendent Unit.....	18 to 25 ft	18 to 25 ft	18 to 25 ft

Outlying districts and partially developed sections with little traffic are usually best lighted by fairly large-size pendent units at long spacings (300 to 500 ft), or more numerous small units where there is tree interference. Units are usually installed as the demand arises, so that it is hardly worth while attempting to make the installation conform to a given standard.

Table V
Industrial and Warehouse Sections Not on Traffic Arteries

PENDENT LAMPS USUALLY OVERHEAD WIRING	CLASSIFICATION BY POPULATION		
	More than 100,000	30,000 to 100,000	Less than 30,000
Lumens of Lamps.....	6000 to 15,000	6000 to 15,000	2500 to 10,000
Arrangement of Lamps.....	Staggered	Staggered	Staggered
Feet of Street per Standard.....	200 to 500	200 to 500	200 to 500
Lumens per Linear Foot of Street.....	20 to 50	15 to 50	10 to 30
Height of Pendent Unit.....	20 to 25 ft	20 to 25 ft	18 to 25 ft

Table VI
Highways Outside of City Limits

PENDENT LAMPS OVERHEAD WIRING	CLASSIFICATION		
	Wide and Heavy Traffic	Narrow and Heavy Traffic	Narrow and Light Traffic
Lumens of Lamps.....	2500 to 10,000	2500 to 10,000	2500 to 4000
Arrangement of Lamps.....	Staggered	Staggered (preferred)	One Side
Feet of Street per Lamp.....	150 to 200	200 to 250	200 to 250
Lumens per Linear Foot.....	15 to 50	10 to 30	8 to 10
Height of Pendent Unit.....	22 to 28 ft	22 to 28 ft	22 to 28 ft

When units especially designed for confining light to the road surface are used, smaller lamps will suffice. Where illumination is also necessary on sidewalks and cross streets with the greater amount on the pavement, the larger lamps are needed.

UNION METAL STEEL LIGHTING STANDARDS

GENERAL

Designed by architects.

Sectional construction consisting of base, shaft, and luminaire permits flexibility of design and choice of light-center lengths.

Groups of designs available; providing standards of the same design to meet all lighting requirements.

Standards flexible but strong.

Reinforced with steel anchor and tie rods extending from concrete subbase to top of shaft.

In collision, shafts bend but do not break.

Reasonable in cost.

Economically transported.

Easily installed.

Low maintenance expense.

Separate base permits setting base when concrete subbase is built which protects the concrete and cable.

CONSTRUCTION

Rigid factory inspection maintained.

Standards consist of:

Ornamental cast base.

Steel shaft.

Top casting.

Steel anchor rods for holding base to foundation.

Steel tie rods for holding shaft to base.

Lead gaskets for sealing joints between the shaft and castings.

BASES

Cast in upright position—eliminates rough, unsightly vertical seams—eliminates blow holes, blisters and flaws—insures uniform thickness of metal.

Made from hand-chased, perfectly finished metal patterns.

Have sharp ornamental detail and relief.

STEEL SHAFTS

Shafts of two or three plies or thicknesses of No. 22 U.S. gauge copper-bearing steel.

Single-ply heavy-duty shafts are No. 11 gauge copper-bearing steel.

Double lock-seams.

Dieflutes.

Plies pressed firmly together with no solder or rivets.

Seams rolled on the inside so that both inside and outside of pole are smooth.

Galvanized with lead and zinc spelter both inside and out.

Painted inside and out with best grade of metallastic paint.

Laminated construction combines great strength with light weight.

Shafts will not shatter on impact.

SPECIAL COPPER-COVERED SHAFTS

Shafts available with outer lamination of 16 oz cold-rolled sheet copper fluted and pressed into place at an increased cost.

Available in natural copper, verd-antique, oxidized copper or statuary bronze finish.

Base and top castings painted to match so that at a nominal cost an effect of cast bronze may be obtained.

Standards available with bronze castings at an increased cost.

ANCHOR AND TIE RODS

Anchor rods of galvanized steel with galvanized rolled threads.

Anchor rods vary from $\frac{5}{8}$ to $1\frac{1}{4}$ inches, depending on size of standard.

Tie rods of galvanized steel.

Tie rods vary from $\frac{1}{2}$ to $\frac{5}{8}$ inches, depending on size of standard.

Nuts, lock washers, and other small parts cadmium plated.

Lock washers used to prevent loosening of nuts due to service vibration.

ADVANTAGES

DESIGN

Wide variety of designs.

Groups of designs in various sizes to meet all requirements in one community.

Metal patterns made by expert pattern makers assure clear, clean-cut lines on cast ornamentation.

SAFETY

Sectional construction minimizes possibility of poles falling to ground on collision.

Steel shafts bend but do not break on impact.

ECONOMY

Light weight—low transportation.

Sectional construction—low installation cost.

Sectional construction permits replacement by parts—low maintenance cost.

CONSTRUCTION

Castings uniform in thickness.

Castings free from unsightly flaws.

Fluted steel shafts galvanized inside and out.

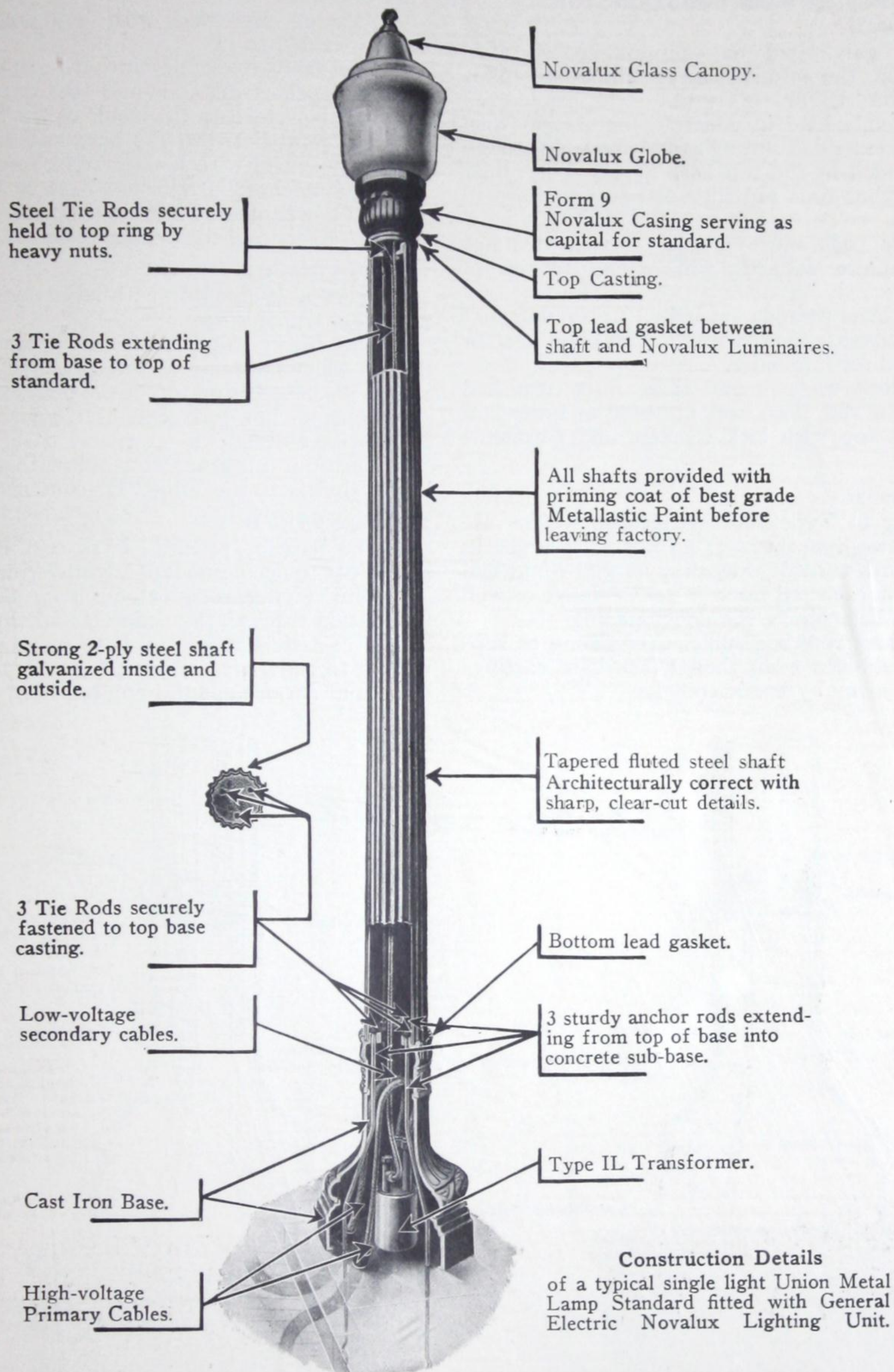
Shafts and castings painted inside and out with best grade of metallastic paint.

Anchor bolts, tie rods, nuts, and washers galvanized or cadmium plated.

Steel-shaft construction permits higher mounting heights.

UNION METAL STEEL LIGHTING STANDARDS

CONSTRUCTION DETAILS



UNION METAL STEEL LIGHTING STANDARDS

BASE CONSTRUCTION

TYPES OF BASE CONSTRUCTION

TYPE "A" (FIG. 1)

Three galvanized or cadmium-coated steel anchor rods, the lower ends of which are made with either a "U" or "L" bend.

Rods embedded in concrete foundation with upper ends extended through the base and through holes provided in the top base flange. The upper ends of anchor rods are threaded to bolt base to foundation.

Anchor rods must project correct distance above concrete so they will extend to top of base.

Three steel tie rods are bolted to top flange of base. Tie rods extend through shaft and bolt head or top adapted for luminaire.

Two lock washers and three nuts furnished with each tie rod. Two nuts are used at lower end and one at top with lock washers under extreme end nuts.

TYPE "B" (FIG. 2)

Similar to Type "A" except heavier for use with high two-light designs; anchor rods larger in diameter with threads extending so that a nut can be placed on each rod under a heavy flange or web cast in the base above the door opening.

The three rods are sufficiently strong to support the standard even though the base castings are broken away by traffic collision.

TYPE "E" (FIG. 3)

Base of cast steel with heavy gauge shaft double welded to it.

The shaft telescopes into the upper part of the base a short distance and the extreme end of the shaft is welded to the inside of the base.

The joint between the base and shaft on the outside is sealed with a watertight weld.

Four anchor bolts fasten base to foundation.

Four ornamental leaf castings are screwed to the base to conceal the anchor-rod nuts.

TYPE "EE" (FIG. 4)

Pedestal is cast iron with large door to accommodate a transformer.

The heavy-gauge shaft has a cast-steel base double welded similar to the Type "E" construction. This base sits on top of the pedestal.

Four anchor rods extend from the concrete foundation through the cast-steel base.

The four nuts are covered with ornamental leaves similar to the Type "E" construction.

TYPE "EEG" (FIG. 5)

The base or pedestal is of cast iron with a large door to accommodate a transformer.

Four anchor rods extend from the concrete foundation through the pedestal and through holes in the cast-steel flange or base member which is welded to the shaft, similar to the Type "E" construction. An ornamental column base casting fits

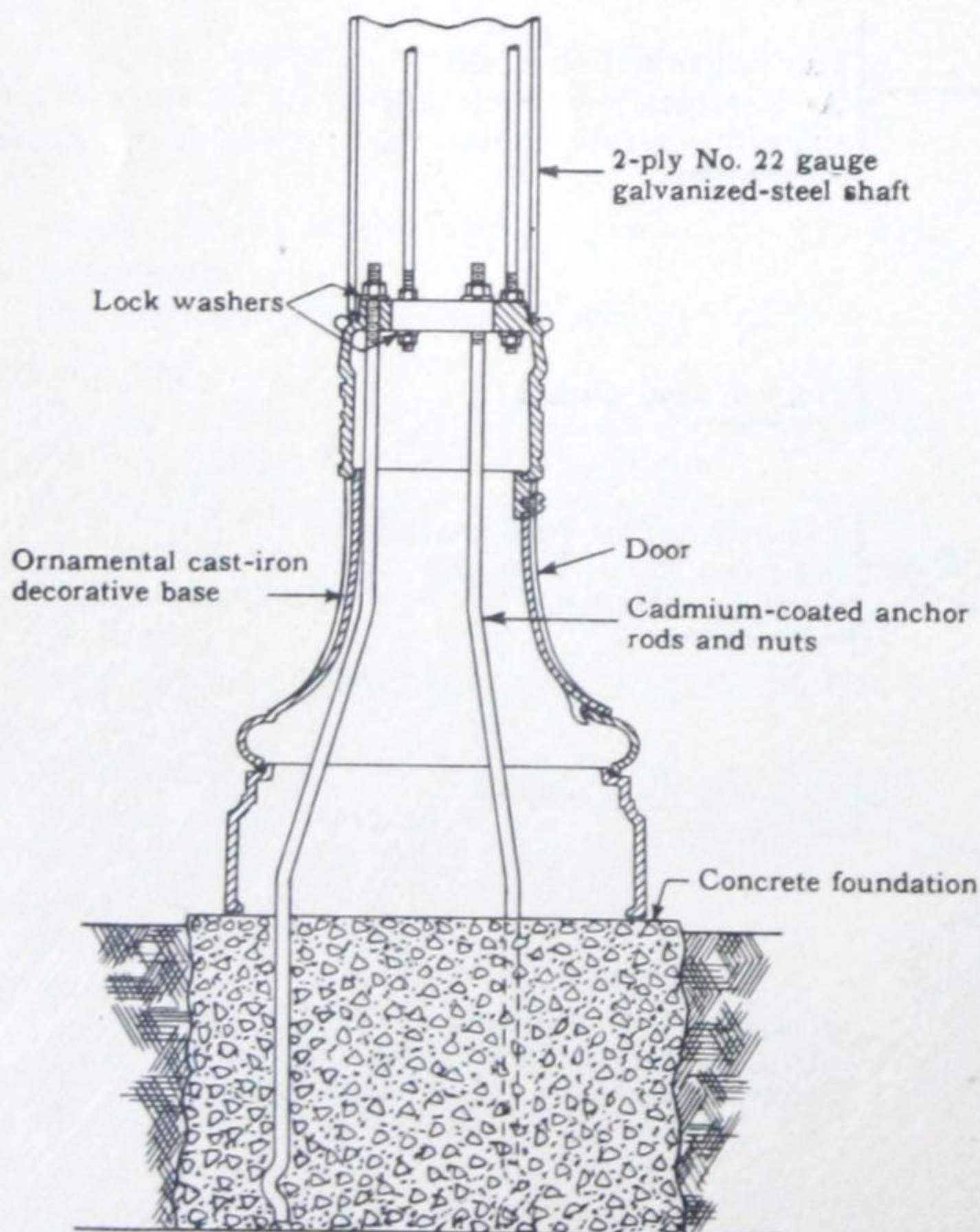


Fig. 1
Type A base construction

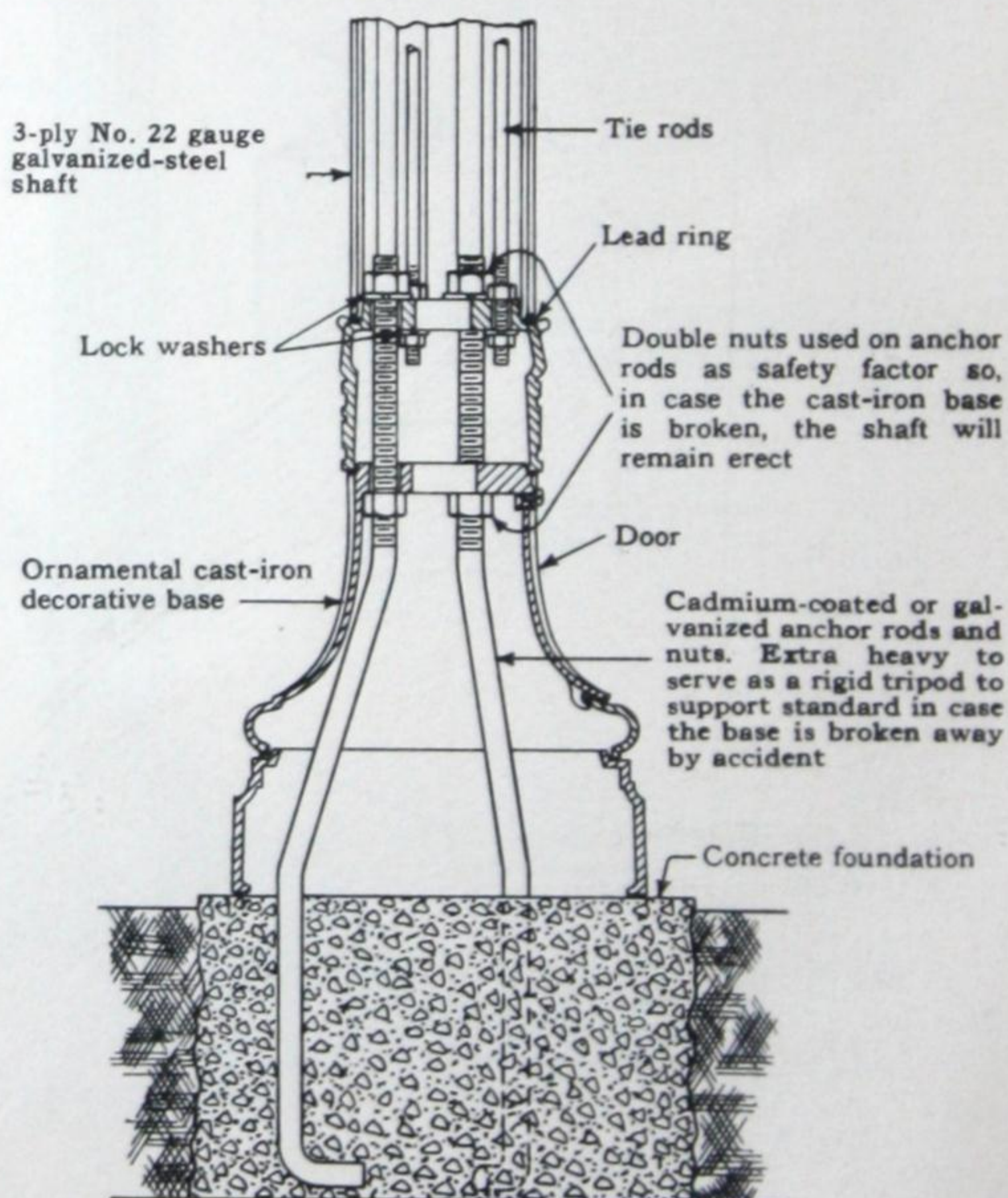


Fig. 2
Type B base construction

UNION METAL STEEL LIGHTING STANDARDS BASE CONSTRUCTION

on top of the pedestal and around the bottom end of the shaft, thereby concealing the anchor rod nuts.

TYPE "JJ" (FIG. 6)

The cast-iron base and heavy-gauge shaft are bolted together before the standard is erected. Anchor lugs are cast in the lower part of the base to fasten to the anchor bolts.

A heavy steel web or flange is welded on the inside of the shaft near the lower end, and rods extend from this flange through the base to lugs adjacent to the anchor lugs.

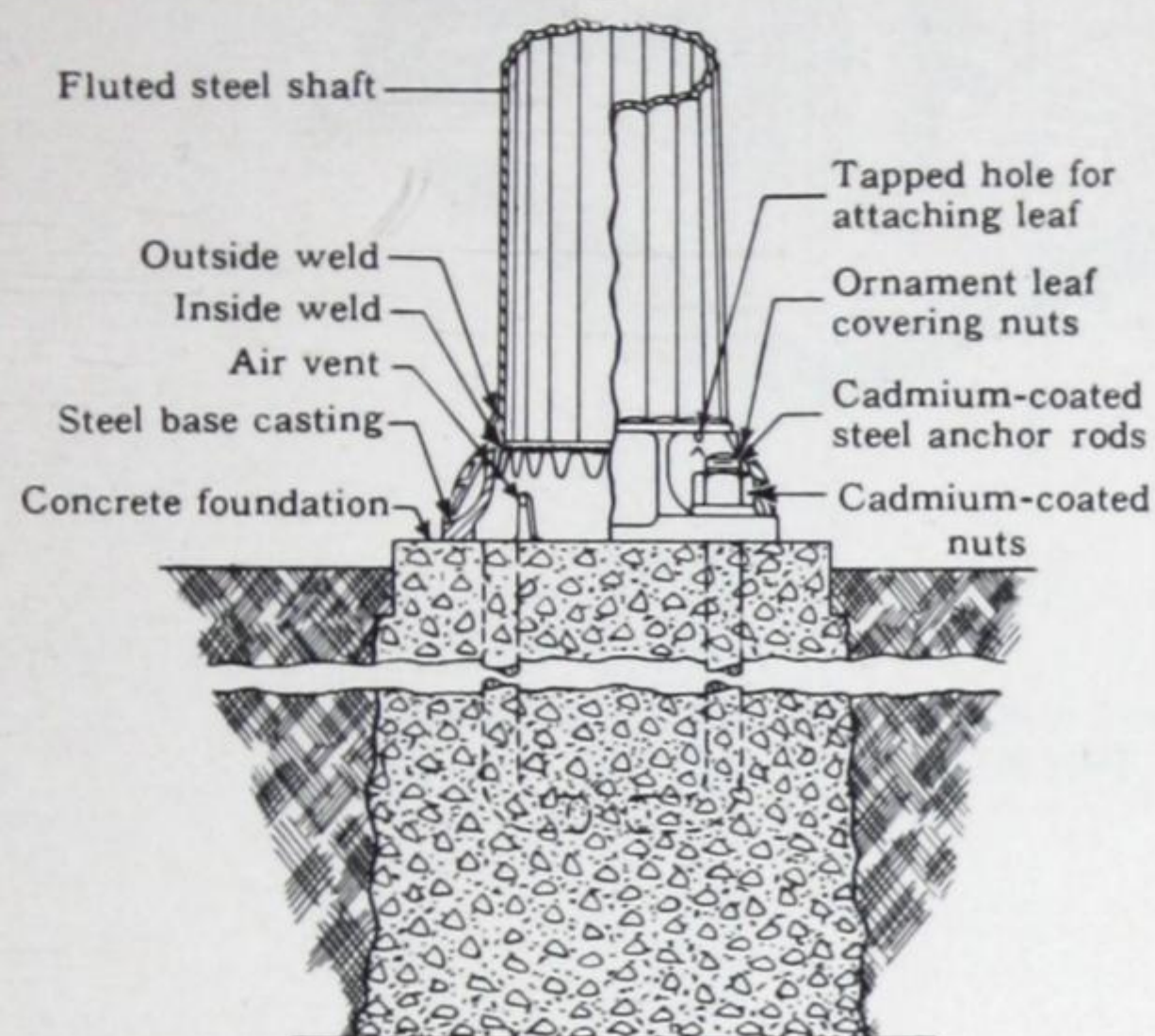


Fig. 3
Type E base construction

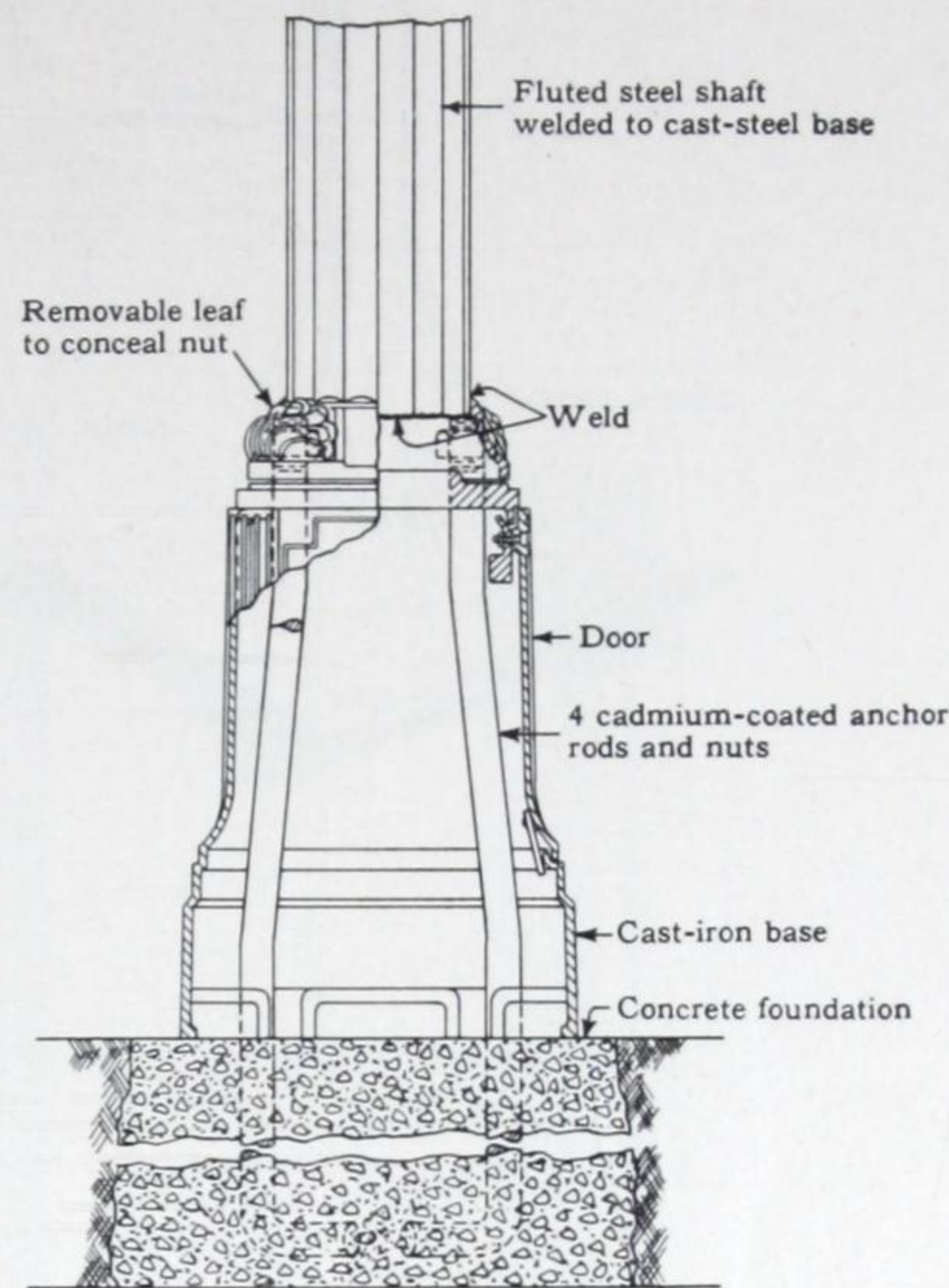


Fig. 4
Type EE base construction

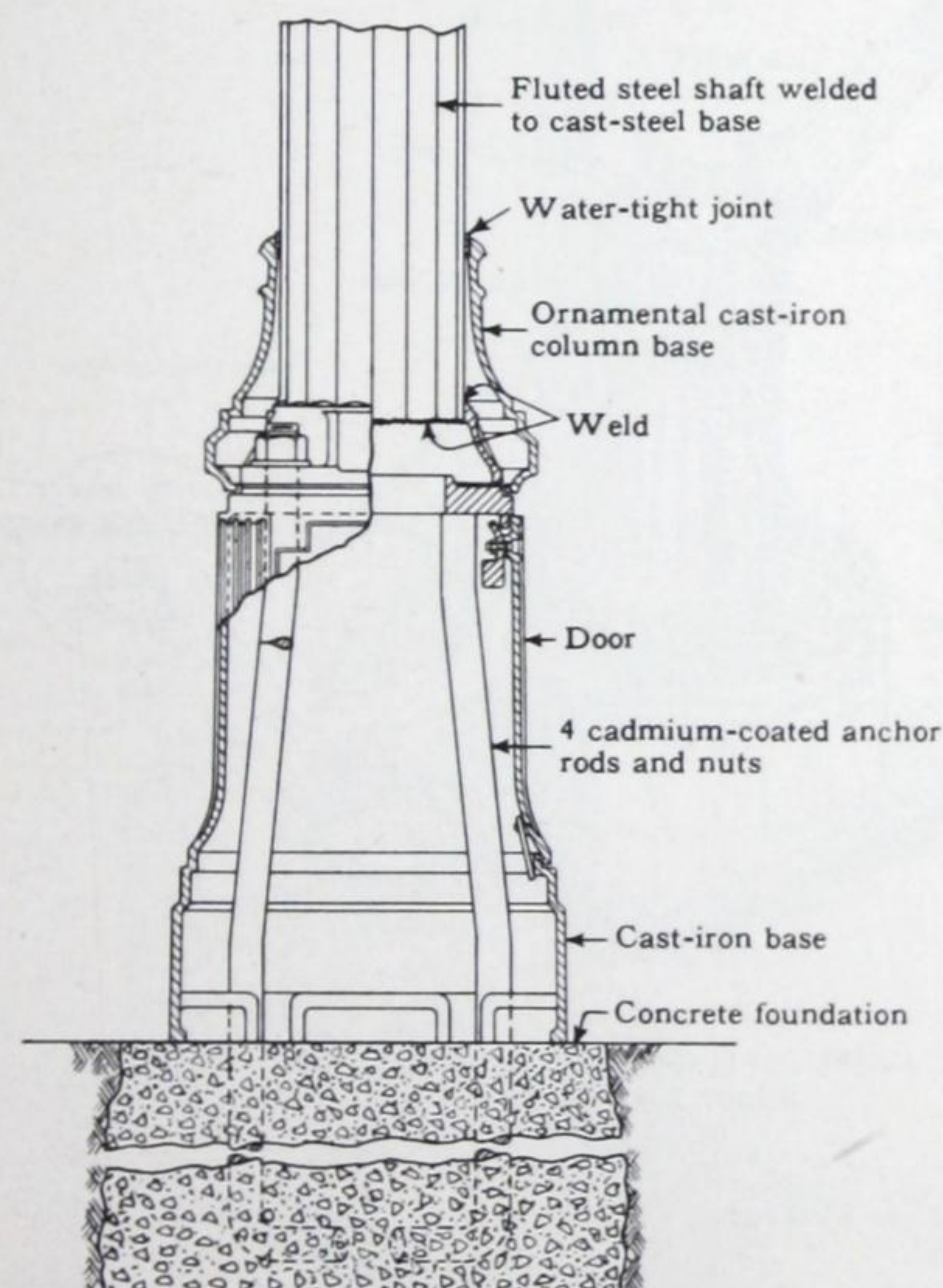


Fig. 5
Type EEG base construction

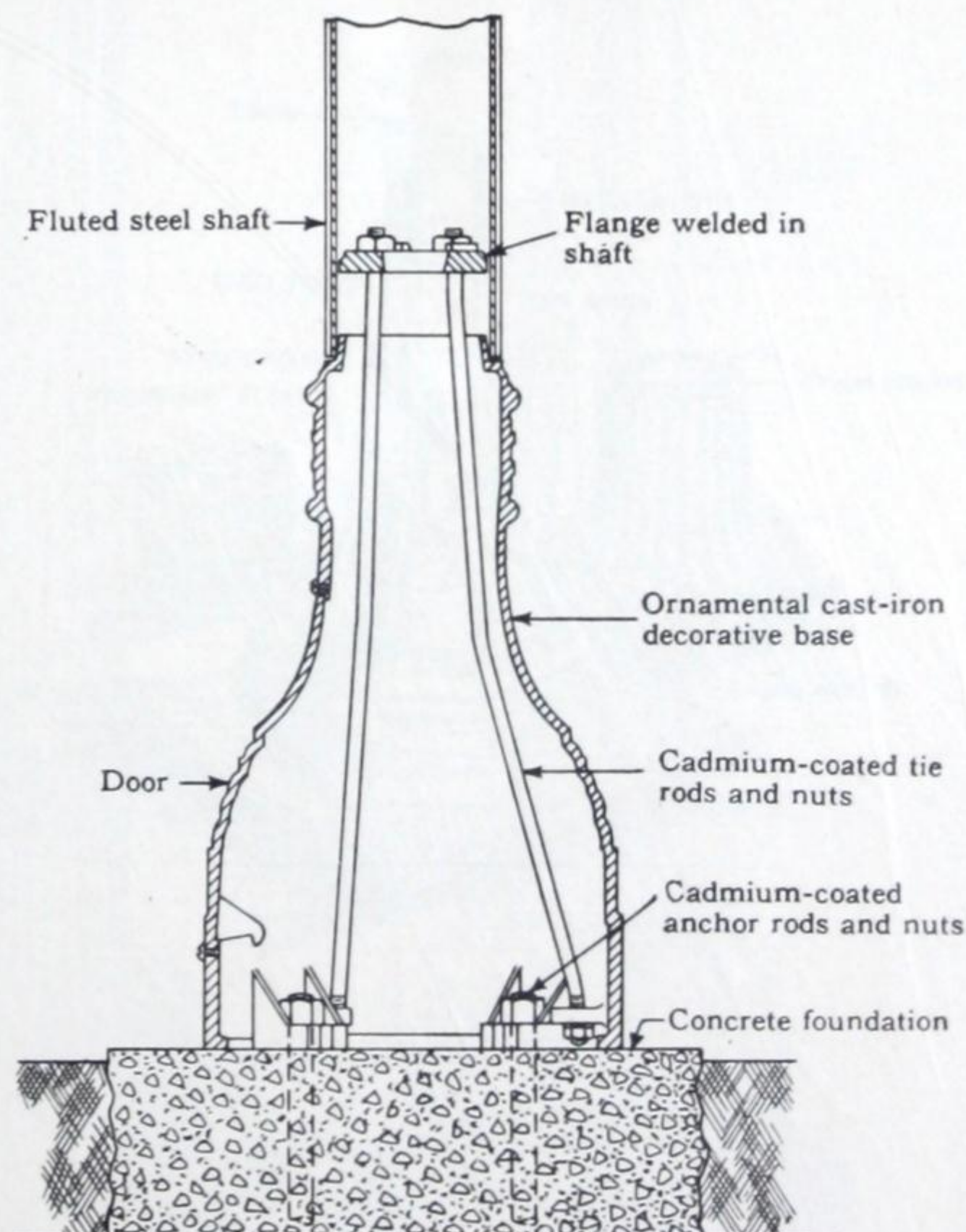
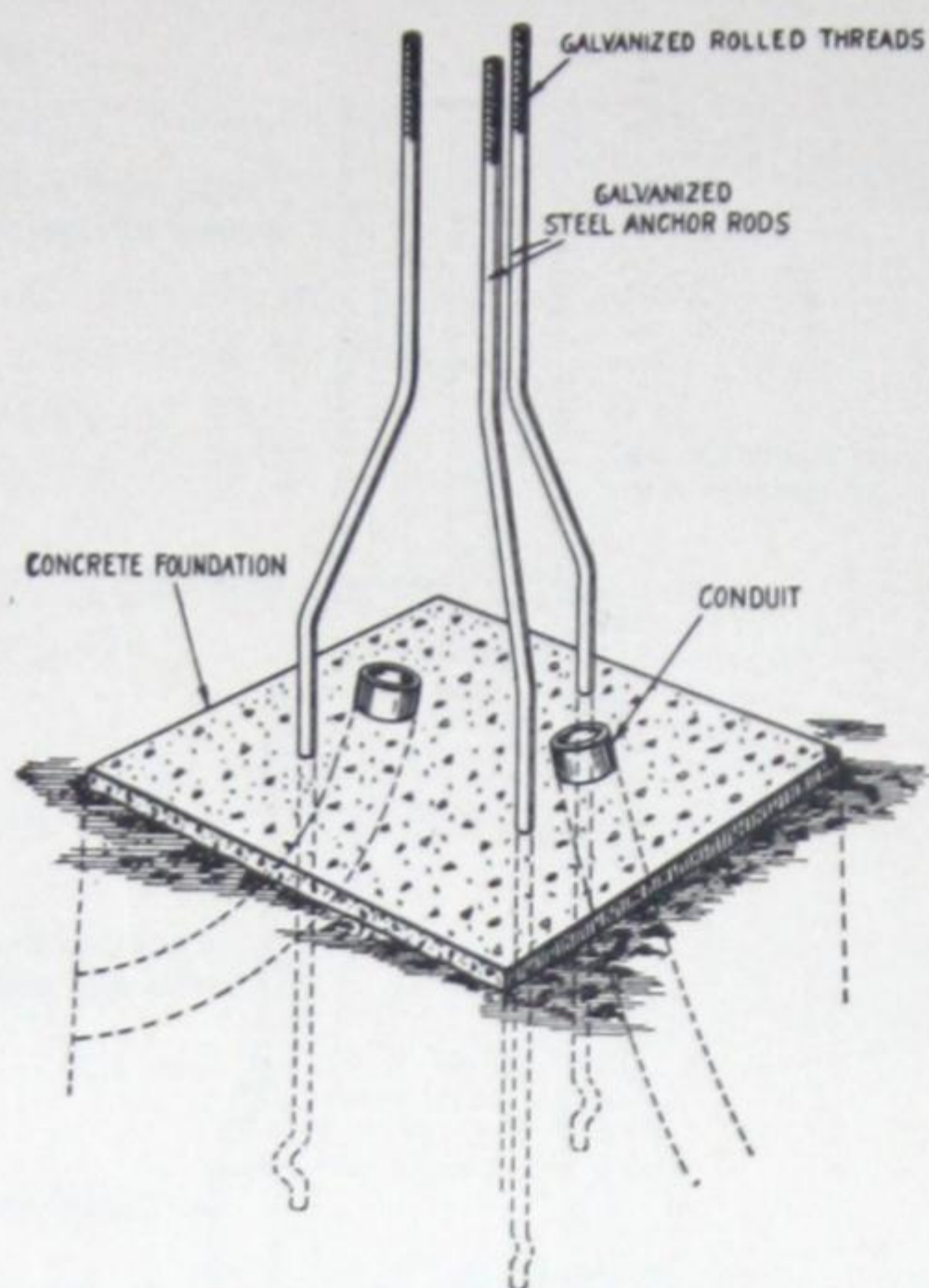


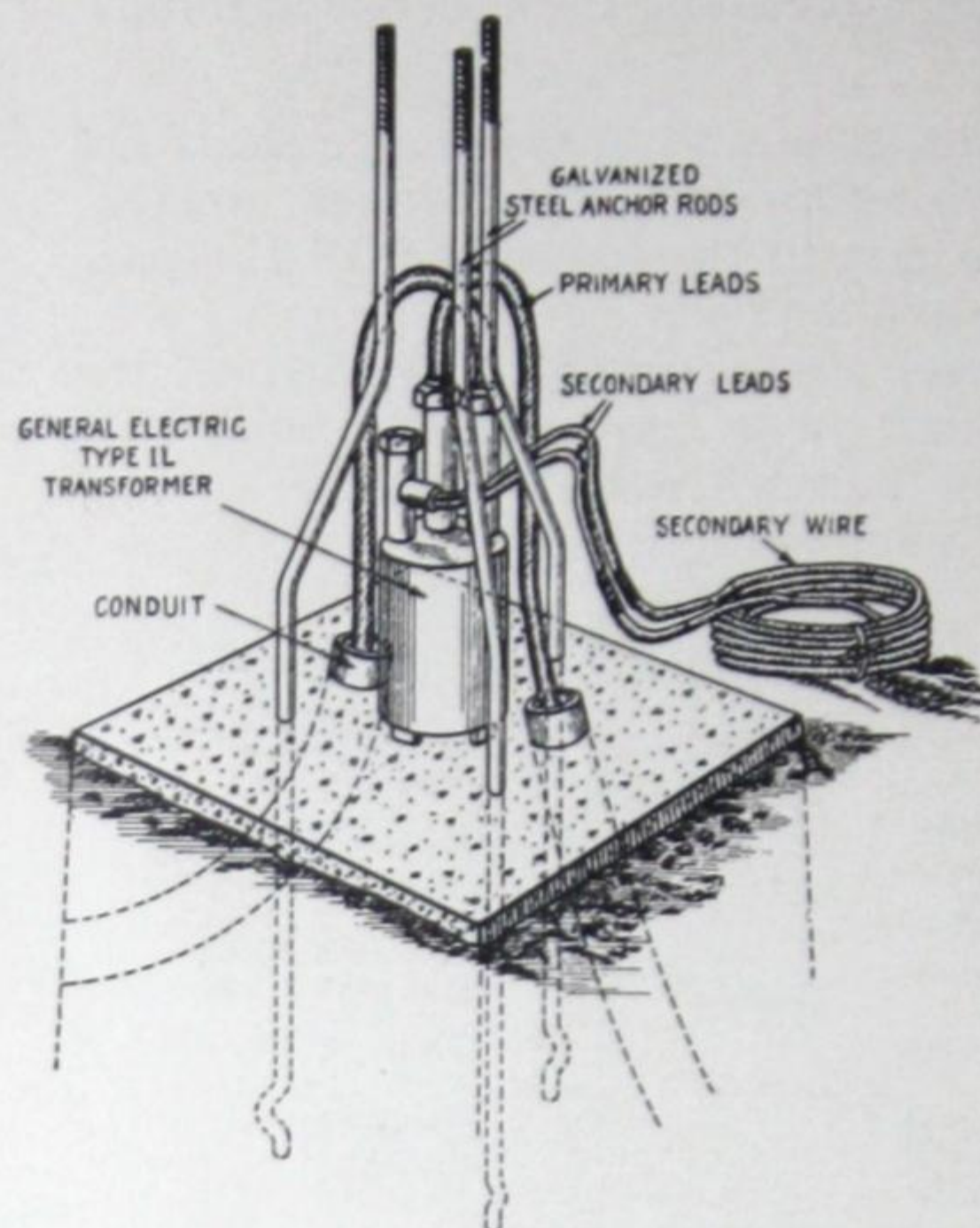
Fig. 6
Type JJ base construction

UNION METAL STEEL LIGHTING STANDARDS

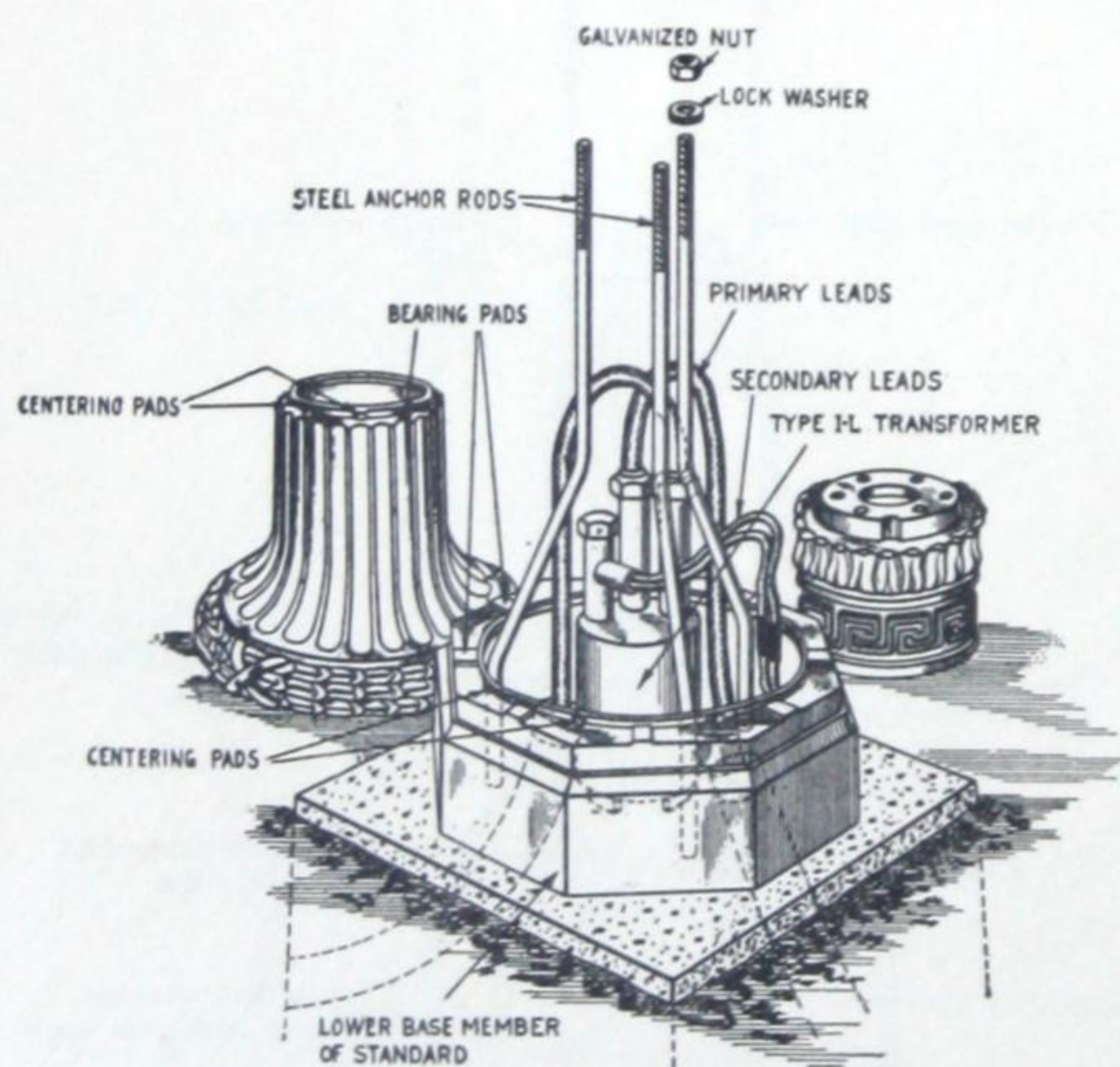
INSTALLATION DETAILS



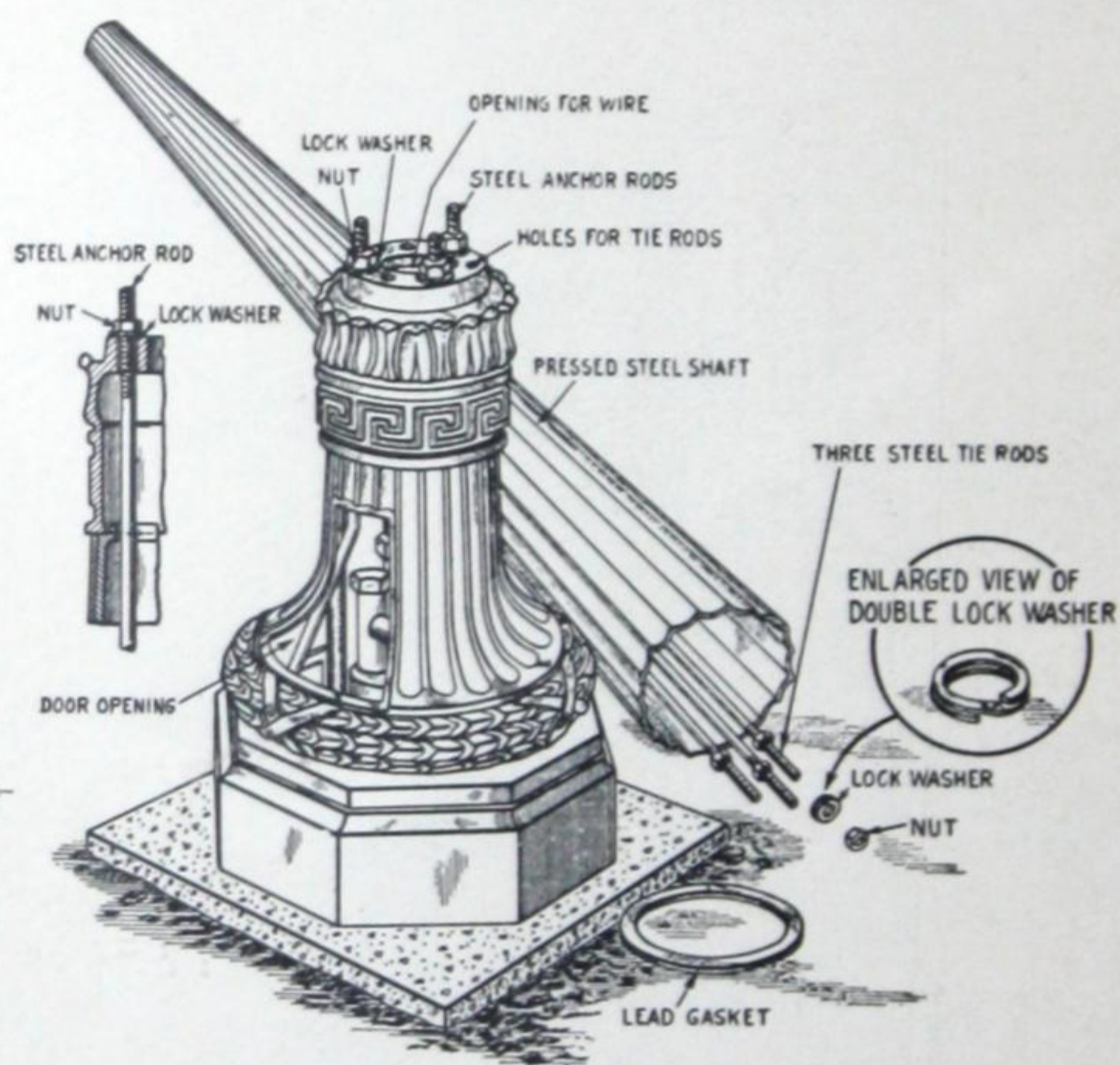
ANCHOR RODS IN POSITION



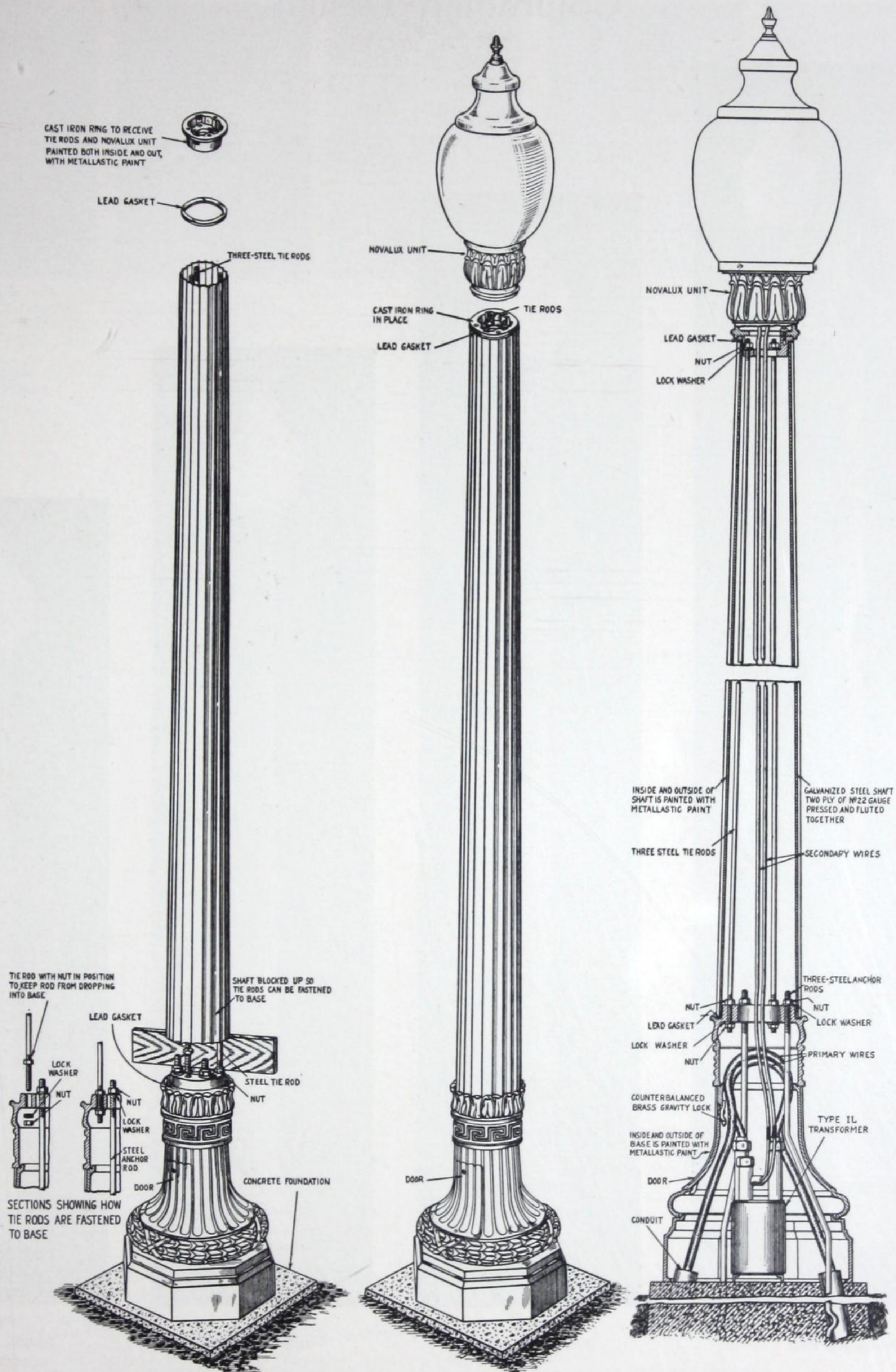
TRANSFORMER IN POSITION AND ELECTRICAL CONNECTIONS MADE BEFORE BASE IS ASSEMBLED



METHOD OF ASSEMBLING BASE

BASE ASSEMBLED - LEVELED AND TIGHTENED DOWN
READY FOR SHAFT

UNION METAL STEEL LIGHTING STANDARDS INSTALLATION DETAILS



UNION METAL STEEL LIGHTING STANDARDS

Columbian Design

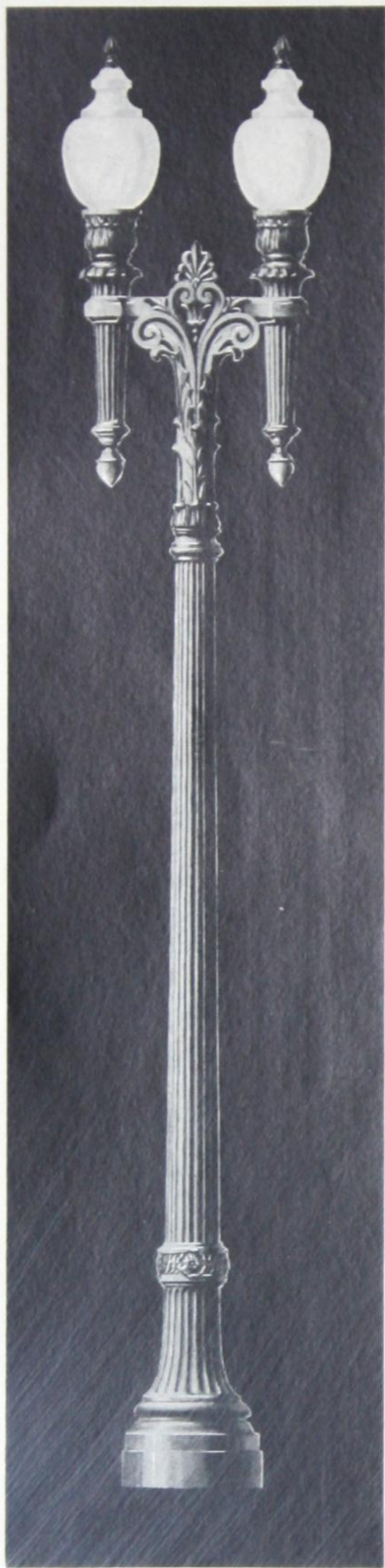


Fig. 1
Design No. 9014

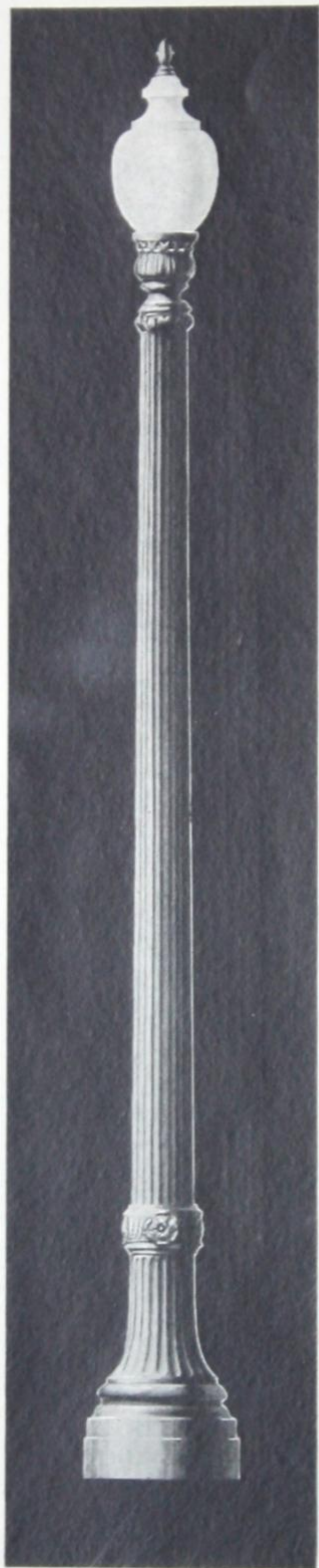


Fig. 2
Design No. 2515

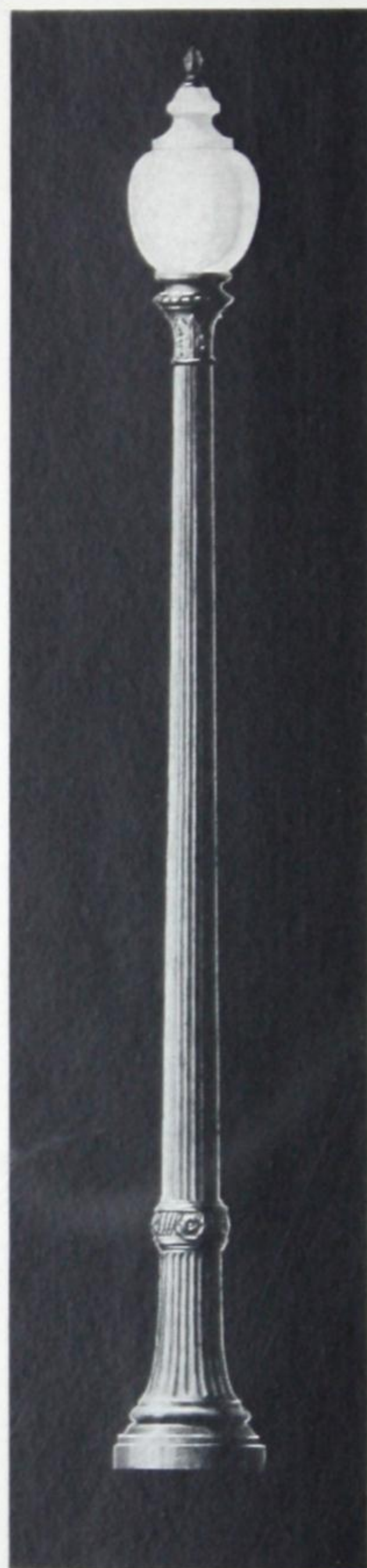


Fig. 3
Design No. 807

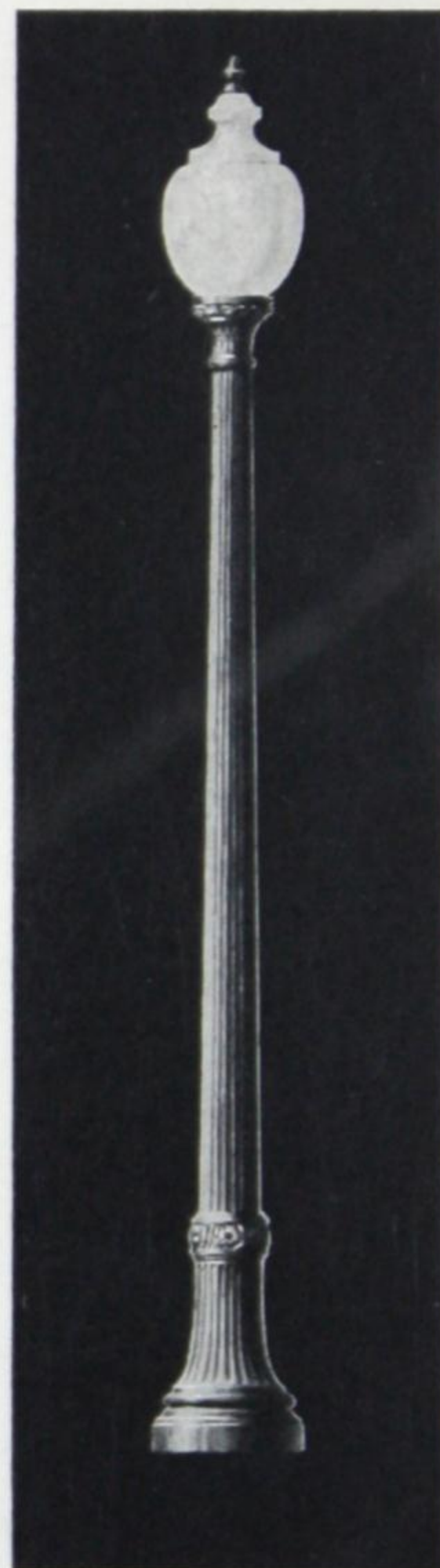


Fig. 4
Design No. 1571

UNION METAL STEEL LIGHTING STANDARDS COLUMBIAN DESIGN



Fig. 5

Form 8 G-E luminaire,
F casing, No. 127-1127
glassware



Fig. 6

Form 9 G-E luminaire,
E casing, No. 107-1107
glassware



Fig. 7

Form 12 G-E luminaire,
N casing, No. 118-1118
glassware



Fig. 8

Form 18A G-E luminaire,
S casing



Fig. 9

Form 38 G-E luminaire,
R casing

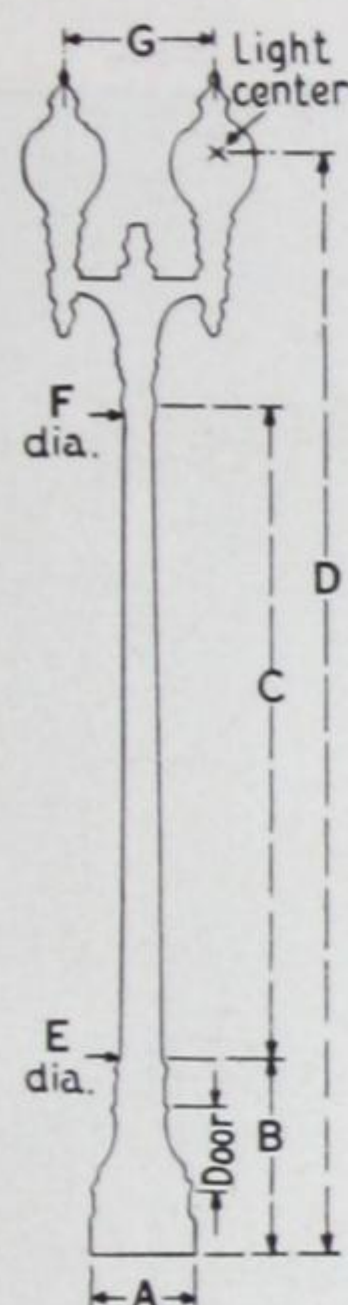


Fig. 10

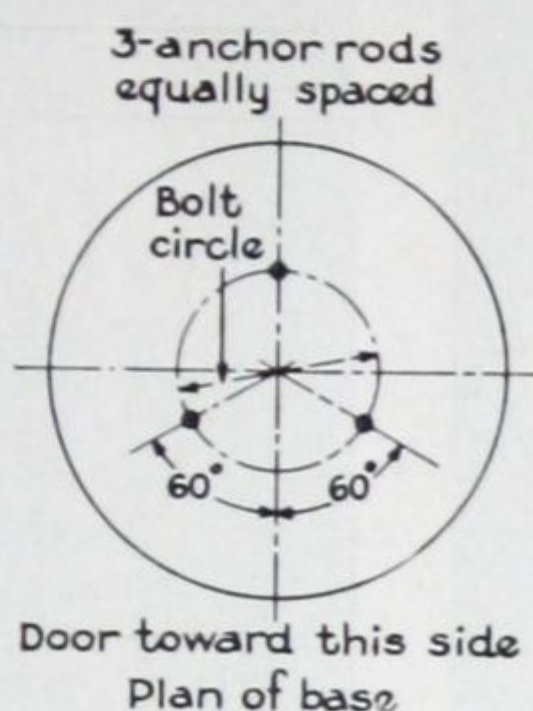


Fig. 11

FORM NO. OF G-E LUMINAIRES AND CASINGS RECOMMENDED

With Union Metal Design No.							
9014		2515		807		1571	
FORM	CASING	FORM	CASING	FORM	CASING	FORM	CASING
9	E	9	E	9	E	8	F, No. 3
12	M, N, O, 19	12	M, N, O, 19	12	M, N, O, 19	18A	S
18B	R	18B	R	18B	R	23A	R
38	R	38	R	38	R		

DESIGN NO.	BOLT CIRCLE DIAM in In.	Projection Rods Above Foundation	ANCHOR ROD Dimensions in In.
9014	16	45 1/2	†1 1/4 by 72 Bent°
2515	16	45 1/2	5/8 by 60 Bent°
807	14	39	5/8 by 60 Bent°
1571	10	30	5/8 by 50 Straight

†Except 9014 which uses 1 by 72 Bent°.

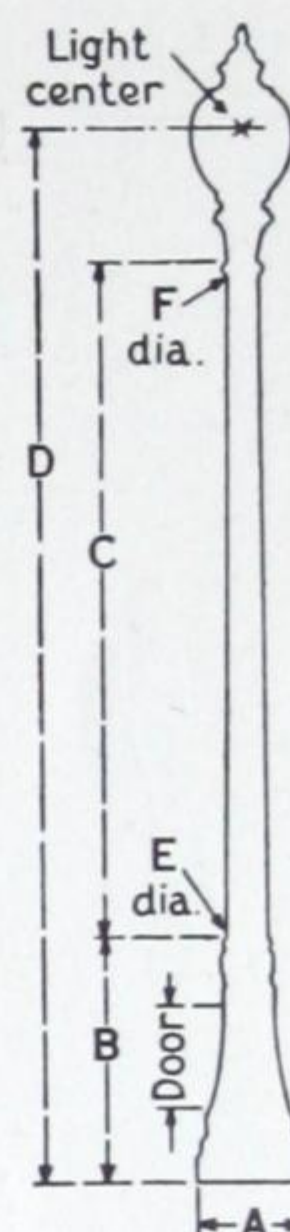


Fig. 12

UNION METAL DESIGN NO.	A	B	C	* D						E	F	G	DOOR DIMEN	†Largest Type IL Trans to Pass through Door Opening	APPROX. SHIP. WT of Pole	LIST PRICE of Pole Class GO-51														
				FORM NO. G-E LUMINAIRE																										
	In.	In.	Ft-In.	Ft-In.	8	9	12	18A	18B	38	In.	In.	In.	In.																
9014 9014X11 9014X12 9014X13	23¾	42½	9-5 10-11 11-11 12-11		18-7 20-1 21-1 22-1	19-3 20-9 21-9 22-9		19-0 20-6 21-6 22-6	19-2 20-8 21-8 22-8	9½	6½	29	10¼ by 12	{ 10,000 Lumen }	855 906 917 928	\$238.00 245.50 249.25 253.00														
2515 2515X11 2515X13 2515X14			23¾	42½	9-5 10-11 12-11 13-11		14-9 16-3 18-3 19-3	15-3 16-9 18-9 19-9							14-11 16-5 18-5 19-5	15-0 16-6 18-6 19-6	9½	5 or 6½ Δ		5½ by 12¼	{ 10,000 Lumen }	453 465 473 488	117.00 122.00 127.00 129.50							
807 807X11 807X12 807X13					20	36	9-5 10-11 11-11 12-11		13-10 15-4 16-4 17-4						14-3 15-9 16-9 17-9							14-2 15-8 16-8 17-8	14-3 15-9 16-9 17-9	7½	5 or 6 Δ		5¼ by 10 by 12¼	{ 10,000 Lumen }	290 302 308 314	80.00 84.00 86.00 88.00
§1571 1571X9 1571X10 1571X11							16½	27	7-11 8-11 9-11 10-11						11-8 12-8 13-8 14-8							11-6 12-6 13-6 14-6							6½	4		4 by 7 by 8½	{ None }	195 200 205 210	58.00 59.50 61.00 62.50

* Light-center dimensions are given for luminaires illustrated above, and will vary slightly for other types of glassware.

† Maximum sizes placed and accessible through door openings. In some bases larger sizes can be accommodated by special methods. Information available on request.

Δ Depending on casing.

§ Not in accordance with I.E.S. code of street lighting for any application.

° Bent to provide space for transformer or cutout.

Dimensions are for reference only. For exact dimensions, apply nearest sales office.

Design numbers and prices include anchor bolts but do not include luminaires, transformers, or MAZDA lamps.

When ordering standards, mention form number of G-E luminaires and casing to be used.

Two-light design No. 9014 uses 3-ply, No. 22 gauge steel shaft and Type A construction as shown on page 18, Fig. 1.

Two-light design No. 9014X11, 9015X12, 9015X13 uses 3-ply, No. 22 gauge steel shaft and Type B construction as shown on page 18, Fig. 2.

All single-light designs use 2-ply, No. 22 gauge steel shaft and Type A construction as shown on page 18, Fig. 1.

UNION METAL STEEL LIGHTING STANDARDS

Metropolitan Design

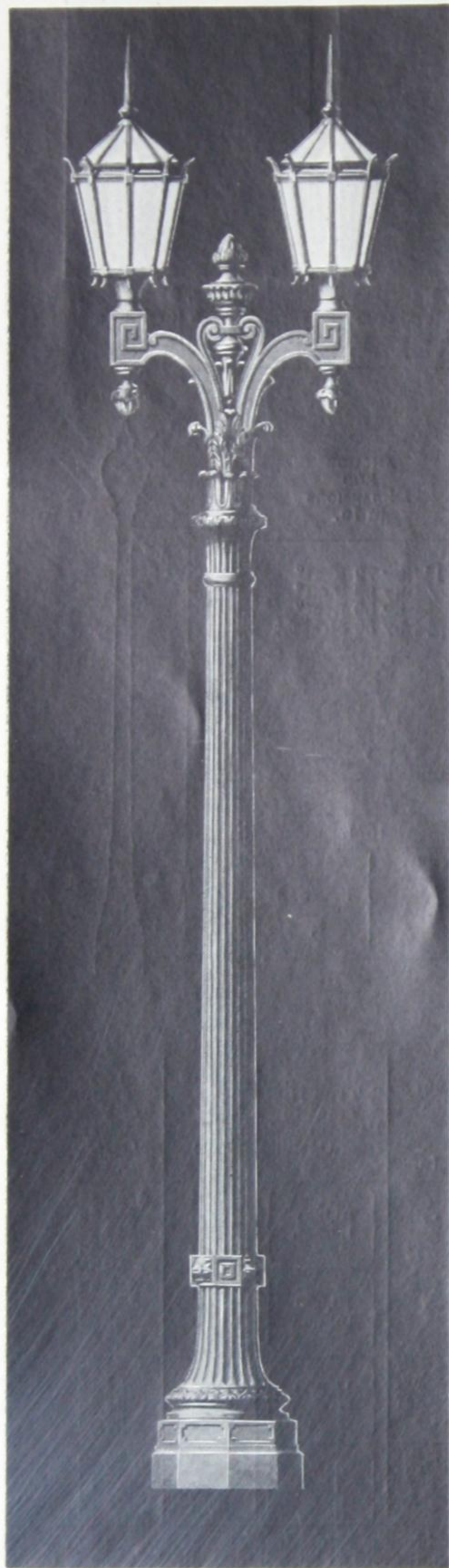


Fig. 1
Design No. 1193

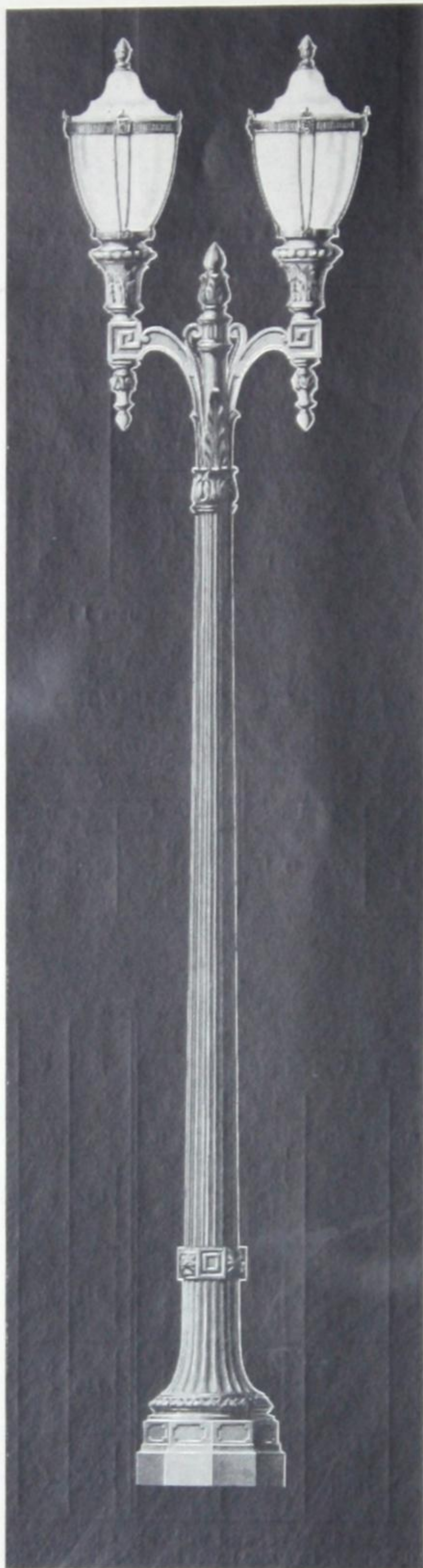


Fig. 2
Design No. 8182

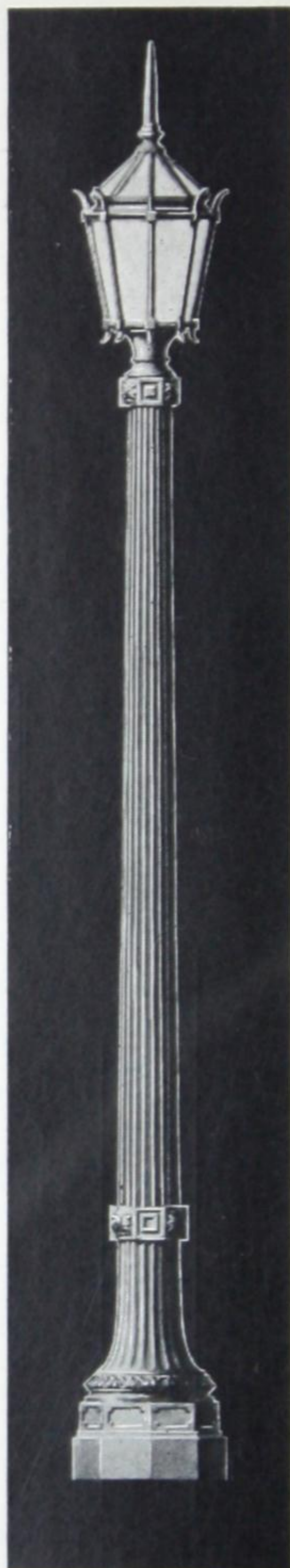


Fig. 3
Design No. 1195

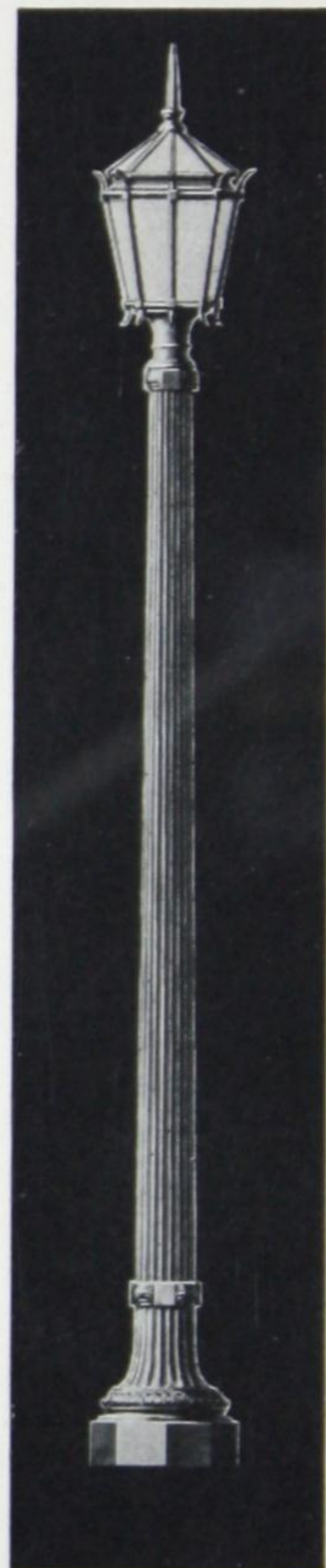


Fig. 4
Design No. 1194

UNION METAL STEEL LIGHTING STANDARDS METROPOLITAN DESIGN



Fig. 5
Form 8 G-E luminaire,
No. 3 casing, with 123-1123
glassware



Fig. 6
Form 9 G-E luminaire,
E casing, with 118-1118
glassware



Fig. 7
Form 12 G-E luminaire,
M casing, with 124-1124
glassware



Fig. 8
Form 18A G-E luminaire,
S casing



Fig. 9
Form 38 G-E luminaire,
R casing

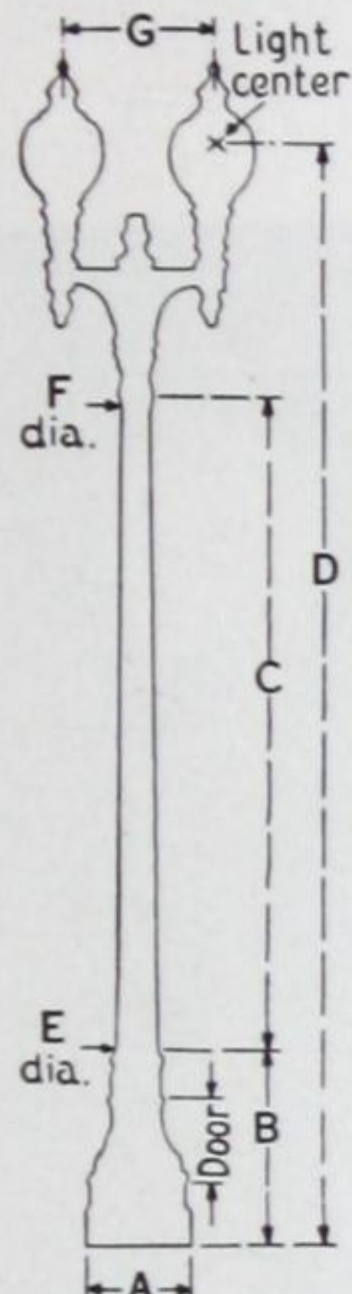


Fig. 10

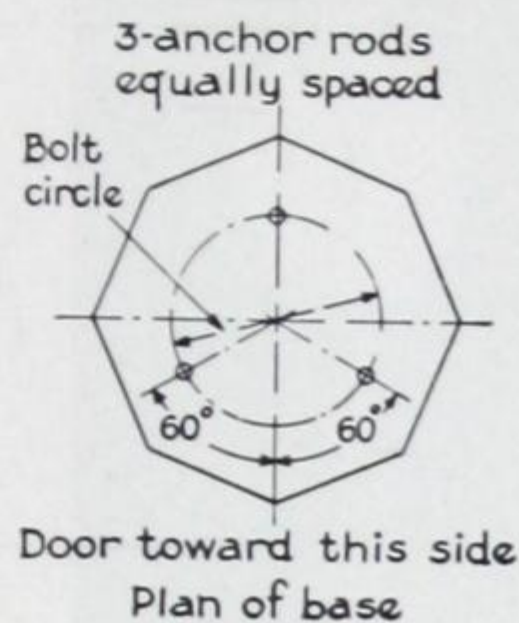


Fig. 11

DESIGN NO.	BOLT CIRCLE DIAM in In.	Projection Rods Above Foundation	ANCHOR ROD Dimensions in Inches
1193	16	42	† 1 1/4 by 60 Bent°
8182	15	41 1/2	□ 1 by 60 Bent°
1195	15	41 1/2	5/8 by 60 Bent°
1194	15	26	5/8 by 60 Bent°

† Except 1193, which uses 1 by 60 Bent°.
□ Except 8182 by 9, which uses 3/4 by 60 Bent°.

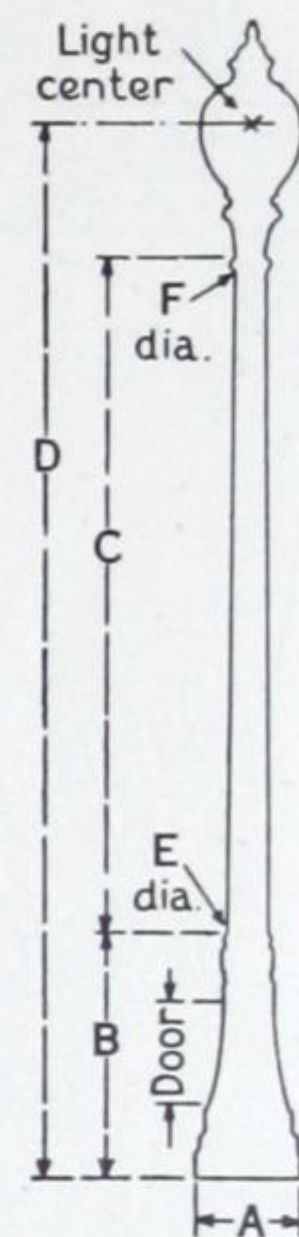


Fig. 12

FORM NO. OF G-E LUMINAIRES AND CASINGS RECOMMENDED

With Union Metal Design No.							
1193		8182		1195		1194	
FORM	CASING	FORM	CASING	FORM	CASING	FORM	CASING
9	E	8	F, No. 3	9	E	8	F, No. 3
12	M, N, O, 19	12	M, N, O	12	M, N, O, 19	18A	S
18B	R	18A	S	18B	R	23A	R
38	R	38	R	38	R		

UNION METAL DESIGN NO.	A	B	C	* D						E	F	G	DOOR DIMEN	† Largest Type IL Trans to Pass through Door Opening	APPROX SHIP. WT of Pole	LIST PRICE of Pole Class GO-51								
				FORM NO. G-E LUMINAIRE																				
				8	9	12	18A	18B	38															
	In.	In.	Ft-In.	Ft-In.	Ft-In.	Ft-In.	Ft-In.	Ft-In.	Ft-In.	In.	In.	In.	In.											
1193 1193X11 1193X12 1193X13	Oct. 23½ by 25½	39	9-4½ 10-11 11-11 12-11		18-4 19-10 20-10 21-10	18-5 19-11 20-11 21-11		18-2 19-8 20-8 21-8	18-5 19-11 20-11 21-11	9½	6½	34	5¼ by 10½ by 12¾	{ 10,000 Lumen	800 848 860 871	\$232.00 239.50 243.25 247.00								
8182X9 8182 8182X11 8182X12	Oct. 21 by 22¾		38½	8-11 9-11 10-11 11-11	16-6 17-6 18-6 19-6		17-0 18-0 19-0 20-0	16-5 17-5 18-5 19-5					16-11 17-11 18-11 19-11	8	5½	28	4 by 8 by 11	{ 2,500 Lumen	652 680 689 698	188.00 191.00 194.00 197.00				
1195 1195X11 1195X12 1195X13	Oct. 21 by 22¾			38½	8-11 10-11 11-11 12-11		13-10 15-10 16-10 17-10	14-0 16-0 17-0 18-0					14-2 16-2 17-2 18-2				14-5 16-5 17-5 18-5	8	5½		4 by 8 by 11	{ 2,500 Lumen	375 387 393 399	107.00 111.00 113.00 115.00
§1194 1194X9 1194X10 1194X11	Oct. 18 by 19½				23¼	7-11 8-11 9-11 10-11	11-6 12-6 13-6 14-6						11-4 12-4 13-4 14-4									6½	4		3¾ by 7½ by 7¼	{ None	210 215 220 225	70.00 71.50 73.50 74.50

* Light-center dimensions are given for luminaires illustrated above, and will vary slightly for other types of glassware.

† Maximum sizes placed and accessible through door openings. In some bases larger sizes can be accommodated by special methods. Information available on request.

△ Depends on casing.

§ Not in accordance with I.E.S. code of street lighting for any application.

° Bent to provide space for transformer or cutout.

Dimensions are for reference only. For exact dimensions, apply nearest Sales Office.

Design numbers and prices include anchor bolts but do not include luminaires, transformers, or MAZDA lamps.

When ordering standards, mention form number of G-E luminaires and casing to be used.

Two-light design shafts of three-ply, and single-light of two-ply No. 22 gauge galvanized steel.

Type "A" (Fig. 1, page 18) base construction used on design No. 1193 and all single-light designs.

Type "B" (Fig. 2, page 18) base construction used on designs No. 1193X11, 1193X12, 1193X13, 8182X9, 8182, 8182X11, and 8182X12.

UNION METAL STEEL LIGHTING STANDARDS

National Design

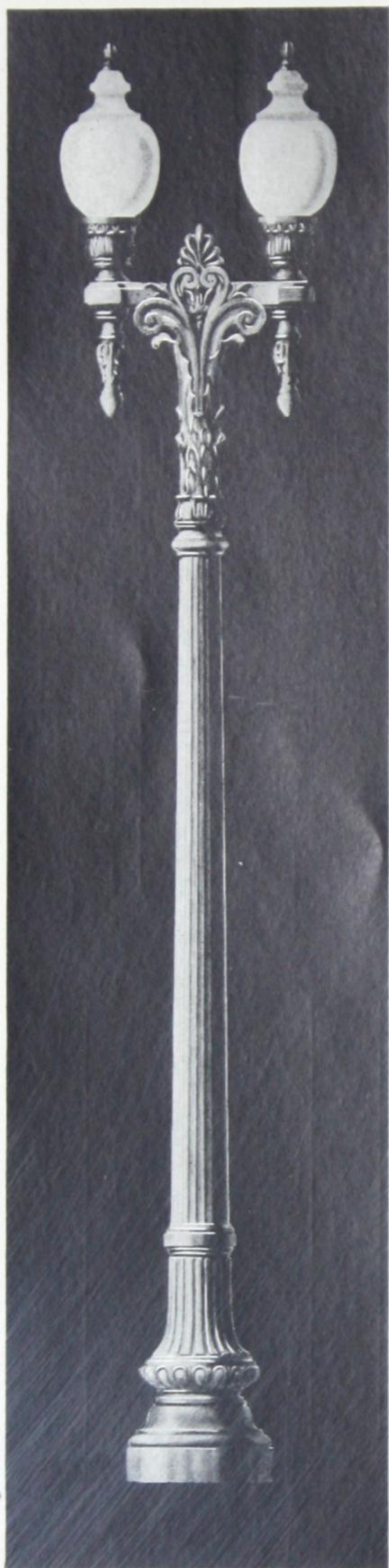


Fig. 1
Design No. 9027

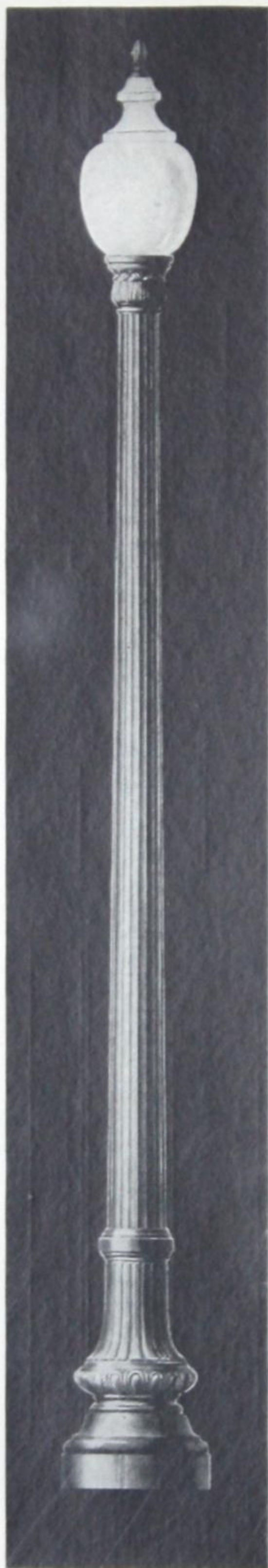


Fig. 2
Design No. 1926

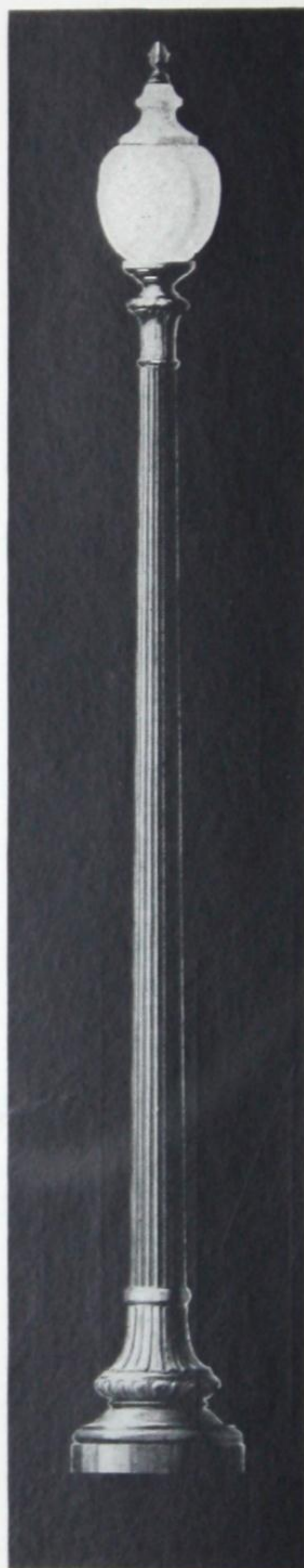


Fig. 3
Design No. 1925

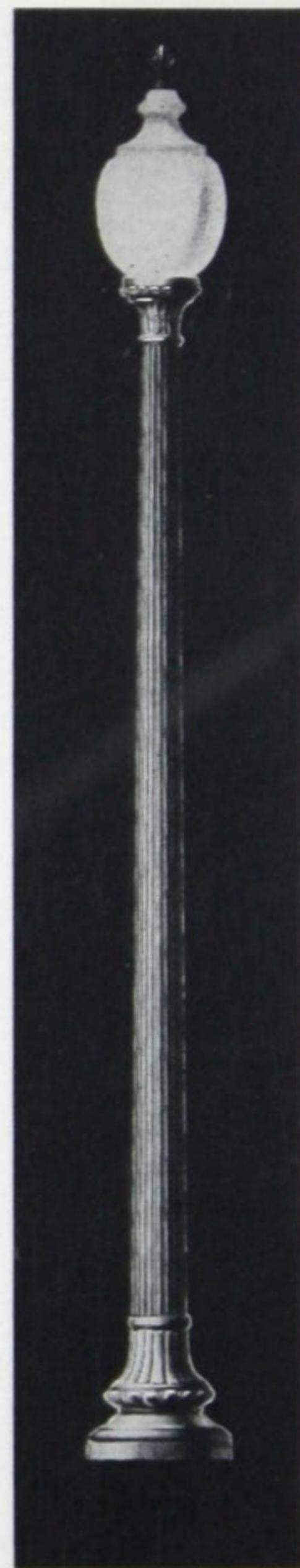


Fig. 4
Design No. 874

UNION METAL STEEL LIGHTING STANDARDS NATIONAL DESIGN



Fig. 5
Form 8, G-E luminaire,
F casing, No. 127-1127
glassware



Fig. 6
Form 9, G-E luminaire,
E casing, No. 107-1107
glassware



Fig. 7
Form 12, G-E luminaire,
M casing, No. 124-1124
glassware



Fig. 8
Form 27, G-E luminaire,
No. 21 casing, 118-1118
glassware



Fig. 9
Form 18A, G-E luminaire,
S casing

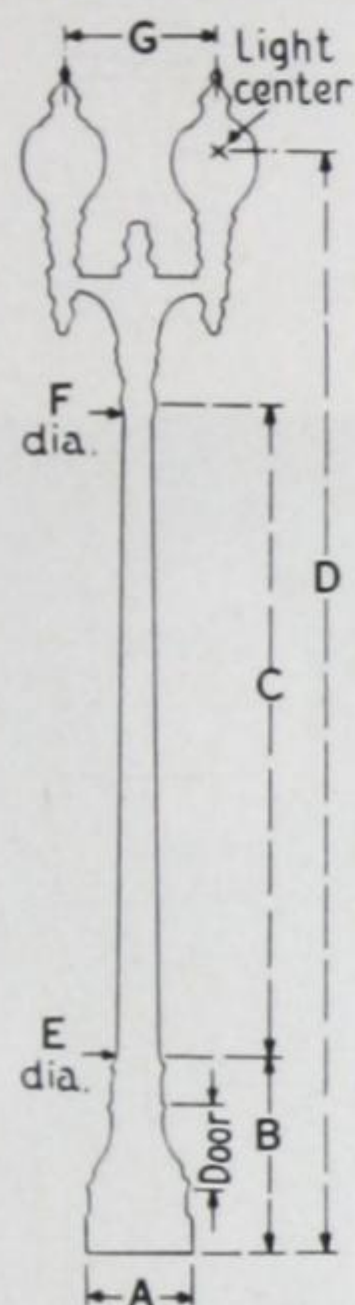
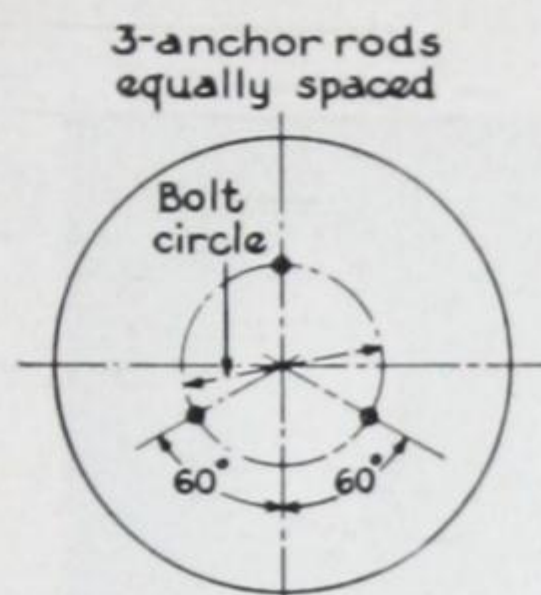


Fig. 10



3-anchor rods
equally spaced
Door toward this side
Plan of base

Fig. 11

FORM NO. OF G-E LUMINAIRES AND CASINGS RECOMMENDED

With Union Metal Design No.					
1926, 9027		1925		874	
FORM	CASING	FORM	CASING	FORM	CASING
9	E	18A	S	8	F, No. 3
12	M, N, O	23A	R	18A	S
18B	R	27	No. 21	23A	R
38					

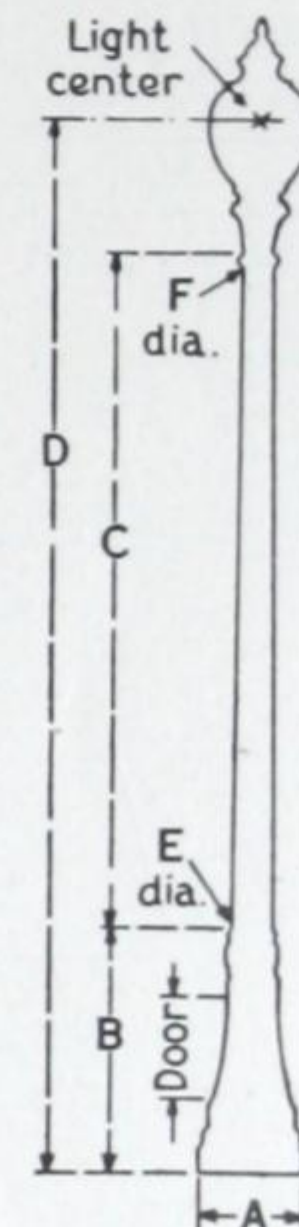


Fig. 12

UNION METAL DESIGN NO.	A	B	C	* D						E	F	G	DOOR DIMEN	†Largest Type IL Trans to Pass through Door Opening	APPROX SHIP. WT of Pole	LIST PRICE of Pole Class GO-51
				FORM NO. G-E LUMINAIRE												
				8	9	12	27	18A	18B							
	In.	In.	Ft.-In.	Ft.-In.	Ft.-In.	Ft.-In.	Ft.-In.	Ft.-In.	Ft.-In.	In.	In.	In.	In.			
9027	25	43	9-4½		18-8	18-11			18-6	9½	6½	29	6¼ by 10 by 11¼	15,000 Lumen	835	\$241.00
9027X11			10-11	20-2	20-5	20-0	889	248.50								
9027X12			11-11	21-2	21-5	21-0	900	252.25								
9027X13			12-11	22-2	22-5	22-0	911	256.00								
1926	25	43	9-4½		14-8	15-0		14-9	9½	5 or 6½		6¼ by 10 by 11¼	15,000 Lumen	450	124.00	
1926X11			10-11	16-2	16-6	16-3	465	129.00								
1926X13			12-11	18-2	18-6	18-3	480	134.00								
1926X14			13-11	19-2	19-6	19-3	488	136.50								
§1925	23¾	25¾	7-11			12-0	12-2	11-4	7½	4½ or 5		5 by 9½ by 7½	10,000 Lumen	290	88.00	
1925X10			9-11		14-0	14-2	13-4	302						92.00		
1925X12			11-11		16-0	16-2	15-4	314						96.00		
1925X13			12-11		17-0	17-2	16-4	320						98.00		
§874	17	17	7-11	10-9				10-7	6½	4		4¾ by 9 by 6½	2500 Lumen, Counter- sink 4 in. and space rods on 10-in. bolt circle	155	55.00	
874X9			8-11	11-9			11-7	160						56.50		
874X10			9-11	12-9			12-7	165						58.00		
874X11			10-11	13-9			13-7	170						59.50		

* Light-center dimensions are given for luminaires illustrated above, and will vary slightly for other types of glassware.

† Maximum sizes placed and accessible through door openings. In some bases larger sizes can be accommodated by special methods. Information available on request.

§ Not in accordance with I.E.S. code of street lighting for any application.

Bent to provide space for transformer or cutout.

Design numbers and prices include anchor bolts but do not include luminaires, transformers, or MAZDA lamps.

When ordering standards, mention form number of G-E luminaires and casing to be used.

Two-light design shafts of three-ply, and single-light of two-ply No. 22 gauge galvanized steel.

Type "A" (Fig. 1 page 18) base construction used on Design No. 9027 and all single-light designs.

Type "B" (Fig. 2 page 18) base construction used on Design No. 9027X11, 9027X12, and 9027X13.

Dimensions are for reference only. For exact dimensions refer nearest Sales Office.

Δ Depending on casing.

UNION METAL STEEL LIGHTING STANDARDS

Pacific Design

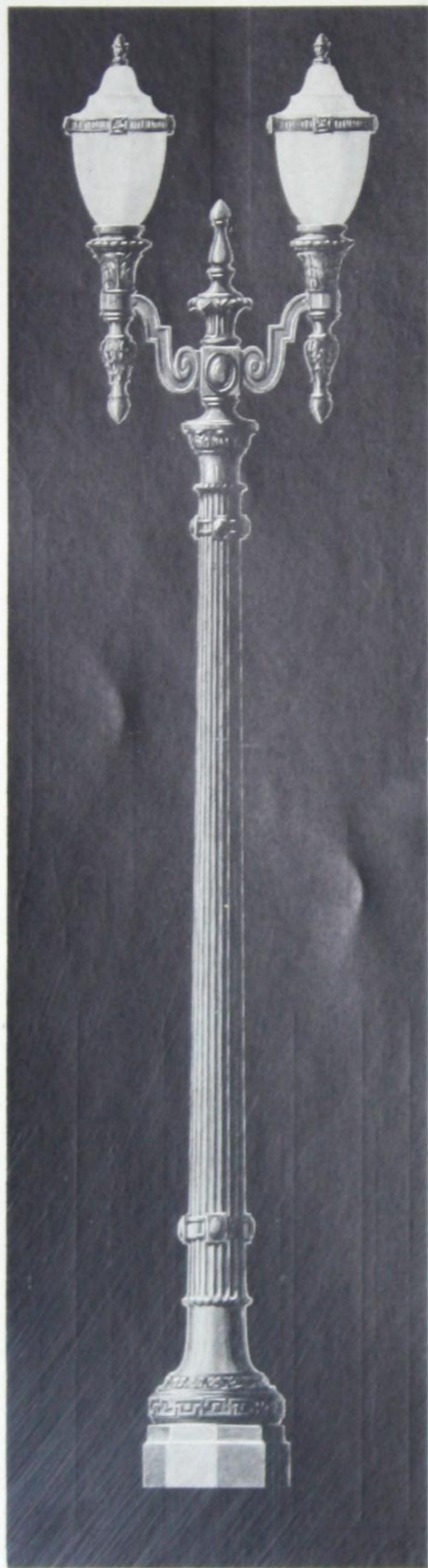


Fig. 1
Design No. 1747

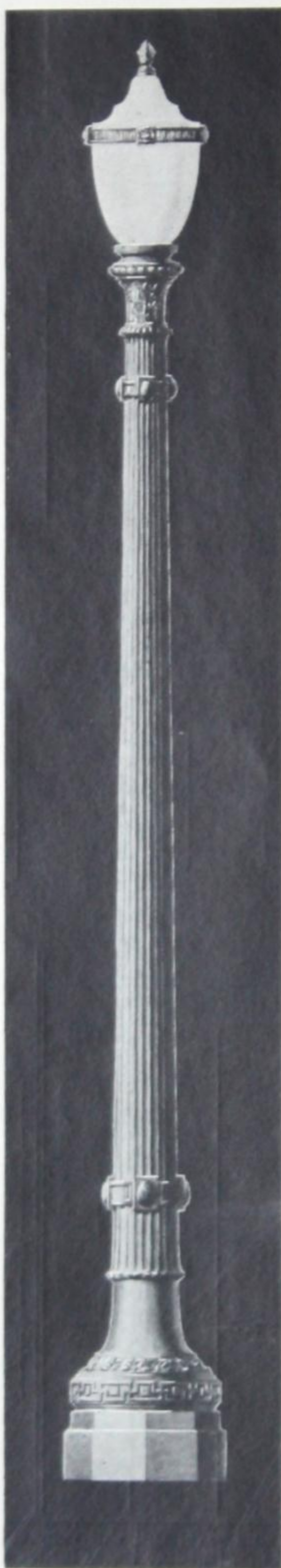


Fig. 2
Design No. 1775

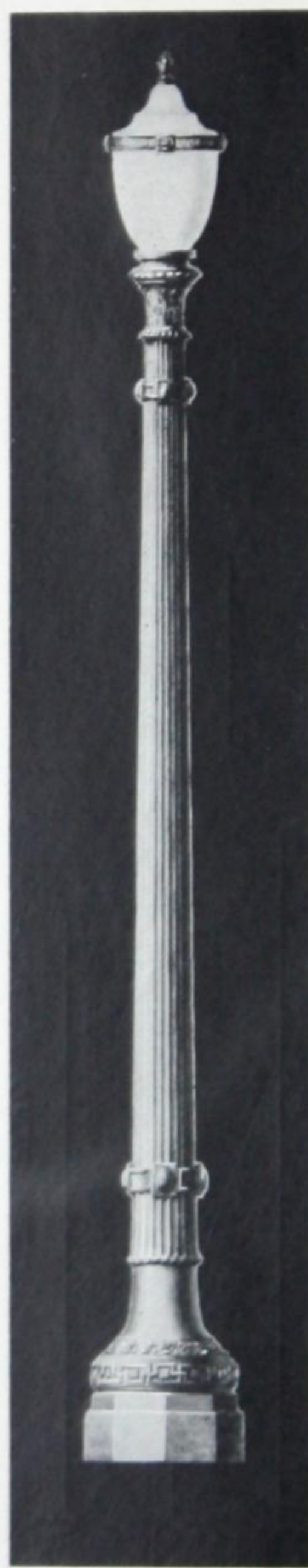


Fig. 3
Design No. 3534



Fig. 4
Design No. 2000

UNION METAL STEEL LIGHTING STANDARDS PACIFIC DESIGN



Fig. 5

Form 8 G-E luminaire,
No. 3 casing, No. 123-1123
glassware



Fig. 6

Form 9 G-E luminaire,
E casing, No. 118-1118
glassware



Fig. 7

Form 12 G-E luminaire,
M casing, No. 124-1124
glassware



Fig. 8

Form 18A G-E luminaire,
S casing



Fig. 9

Form 38 G-E luminaire
R casing

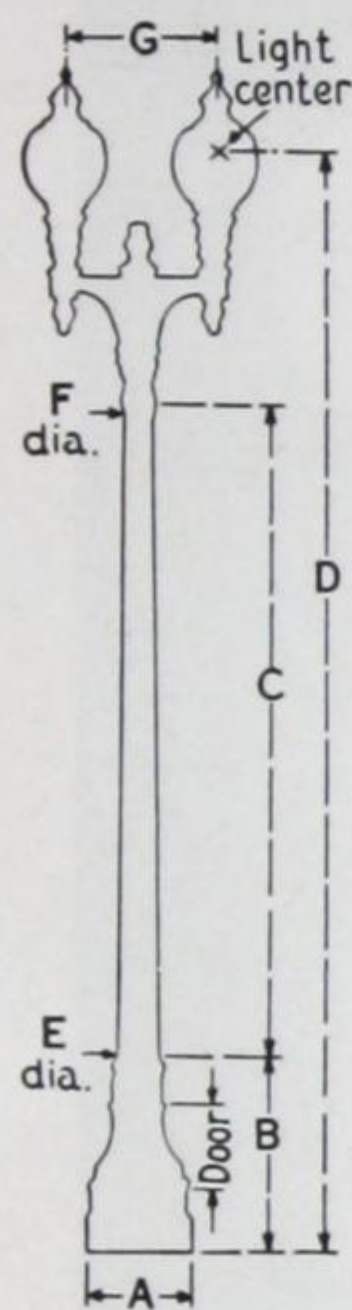


Fig. 10

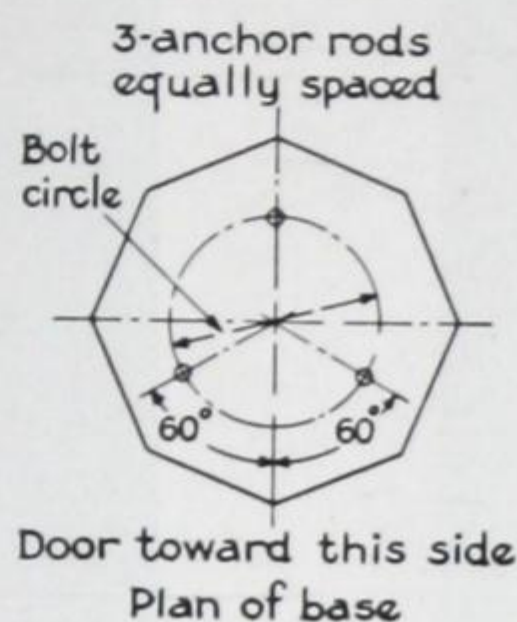


Fig. 11

FORM NO. OF G-E LUMINAIRES AND CASINGS RECOMMENDED

With Union Metal Design No.					
1747, 1775		3534		2000	
FORM	CASING	FORM	CASING	FORM	CASING
9	E	12	M, N, O, 19	8	F, No. 3
12	M, N, O, 19	18B	R	18A	S
18B	R	38	R	23A	R
38	R				

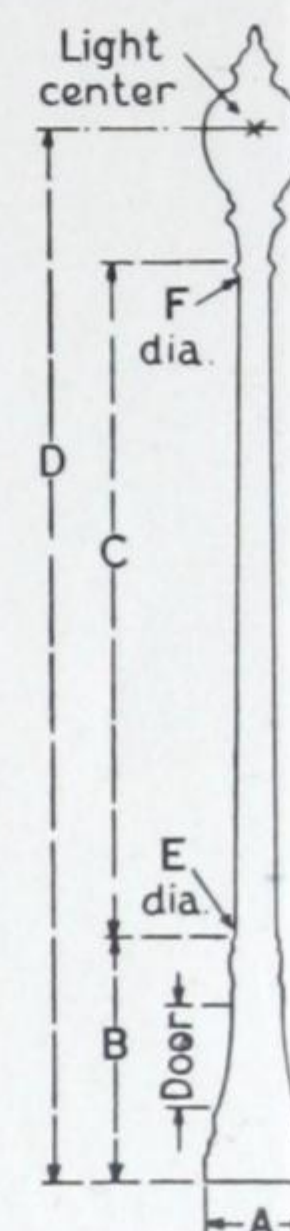


Fig. 12

DESIGN NO.	BOLT CIRCLE DIAM in In.	Projection Rods Above Foundation	ANCHOR ROD Dimensions in In.
1747	14	48 1/2	† 1 1/4 by 72 Bent°
1775	14	48 1/2	5/8 by 72 Bent°
3534	14	41	5/8 by 60 Straight
2000	15	25	5/8 by 42 Straight

† Except 1747, which uses 1 by 72 Bent°.

UNION METAL DESIGN NO.	A	B	C	* D						E	F	G	DOOR DIMEN	†Largest Type IL Trans to Pass through Door Opening	APPROX. SHIP. WT. of Pole	LIST PRICE of Pole Class GO-51												
				FORM NO. G-E LUMINAIRE																								
				8	9	12	18A	18B	38																			
	In.	In.	Ft-In.	Ft-In.	Ft-In.	Ft-In.	Ft-In.	Ft-In.	Ft-In.	In.	In.	In.	In.															
1747 1747X11 1747X12 1747X13	Oct. 24 by 26	44 1/2	{ 9- 4 1/2 10-11 11-11 12-11		18-4 19-10 20-10 21-10	18-5 19-11 20-11 21-11		18-1 19-8 20-8 21-8	18-2 19-9 20-9 21-9	{ 9 1/2	7 1/2	34	{ 5 1/2 by 9 1/4 by 10	10,000 Lumen	795 848 859 870	\$233.00 240.50 244.25 248.00												
1775 1775X11 1775X13 1775X14	Oct. 24 by 26			44 1/2	{ 9- 4 1/2 10-11 12-11 13-11		15-9 17-3 19-3 20-3	15-10 17-4 19-4 20-4							15-6 17-0 19-0 20-0	15-9 17-3 19-3 20-3	{ 9 1/2	Δ 5 or 6	{ 5 1/2 by 9 1/4 by 10	10,000 Lumen	450 458 473 480	134.00 139.00 144.00 146.50						
3534 3534X11 3534X12 3534X13	Oct. 19 1/2 by 21					38 1/4	{ 9- 4 1/2 10-11 11-11 12-11		15-4 16-10 17-10 18-10						15-5 16-8 17-8 18-8						15-2 16-11 17-11 18-11	15-5 16-11 17-11 18-11	{ 7 1/2	5	{ 4 1/2 by 9 3/8 by 9 1/2	10,000 Lumen	340 352 358 364	101.00 105.00 107.00 109.00
§2000 2000X9 2000X10 2000X11	Oct. 18 by 19 1/2							22	{ 7-11 8-11 9-11 10-11						11-5 12-5 13-5 14-5	11-3 12-3 13-3 14-3												{ 7	4	{ 3 1/4 by 7 1/2 by 6	2500 Lumen Count- ersink 3 in.	200 206 212 218	70.00 72.00 74.00 76.00

* Light-center dimensions are given for luminaires illustrated above, and will vary slightly for other types of glassware.

† Maximum sizes placed and accessible through door openings. In some bases larger sizes can be accommodated by special methods. Information available upon request.

Δ Depending on casing.

§ Not in accordance with I.E.S. code of street lighting for any application.

° Bent to provide space for transformer or cutout.

Design numbers and prices include anchor bolts but do not include luminaires, transformers, or MAZDA lamps.

When ordering standards, mention form number of G-E luminaires and casing to be used.

Two-light design shafts of three-ply, and single-light of two-ply No. 22 gauge galvanized steel.

Type "A" (Fig. 1 page 18) base construction used on Design No. 1747 and all single-light designs.

Type "B" (Fig. 2 page 18) base construction used on Design No. 1747X11, 1747X12, and 1747X13.

Dimensions are for reference only. For exact dimensions refer nearest Sales Office.

UNION METAL STEEL LIGHTING STANDARDS

Empire Design

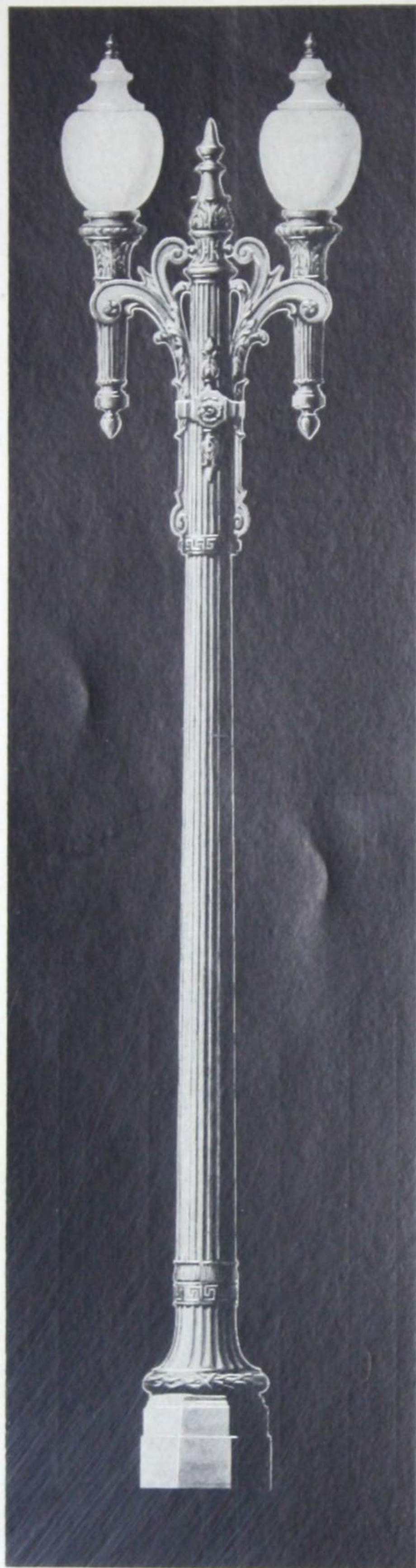


Fig. 1
Design No. 1655

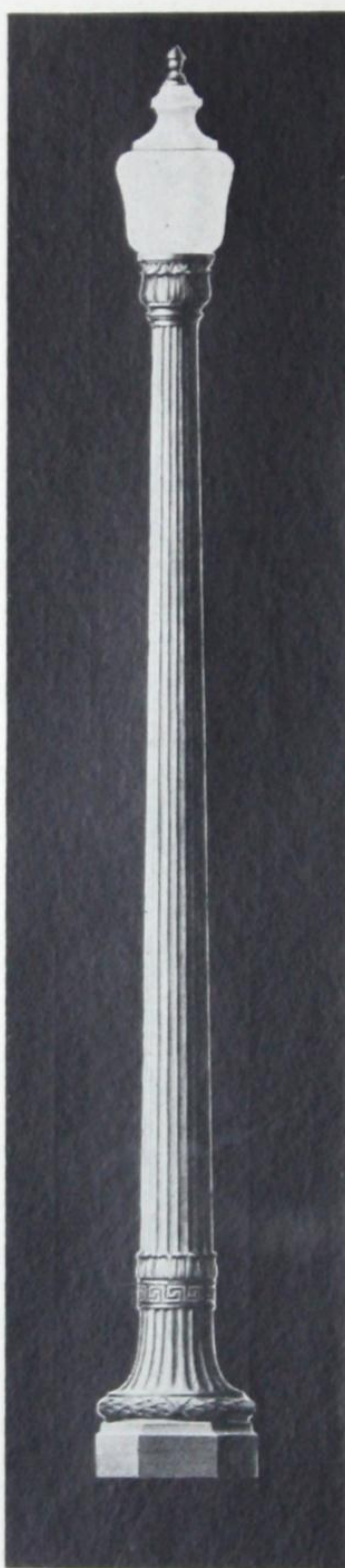


Fig. 2
Design No. 792

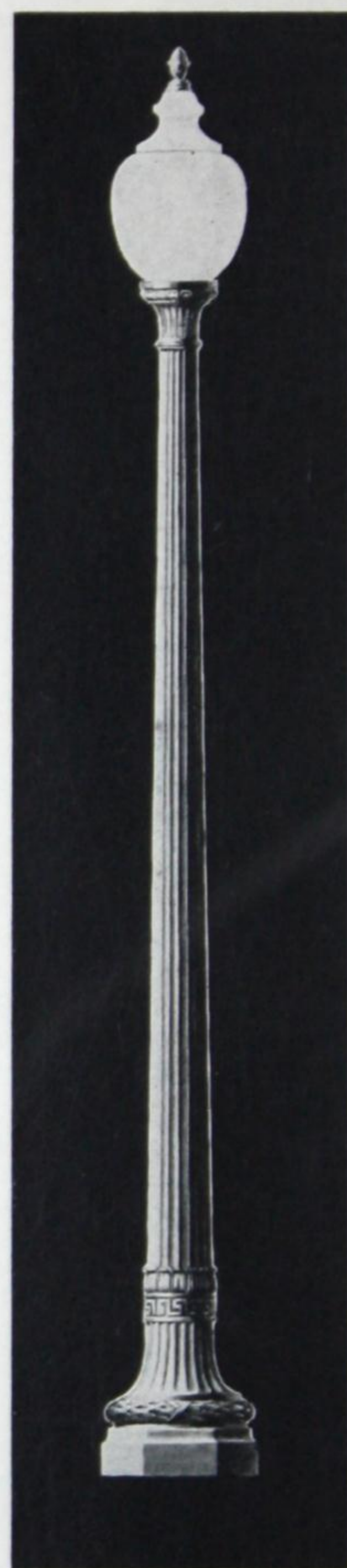


Fig. 3
Design No. 2216

UNION METAL STEEL LIGHTING STANDARDS EMPIRE DESIGN



Fig. 4
Form 8 G-E luminaire,
F casing, No. 127-1127
glassware



Fig. 5
Form 9 G-E luminaire,
E casing, No. 107-1107
glassware



Fig. 6
Form 12 G-E luminaire,
N casing, No. 118-1118
glassware



Fig. 7
Form 27 G-E luminaire,
21 casing, No. 118-1118
glassware



Fig. 8
Form 18A G-E luminaire,
S casing

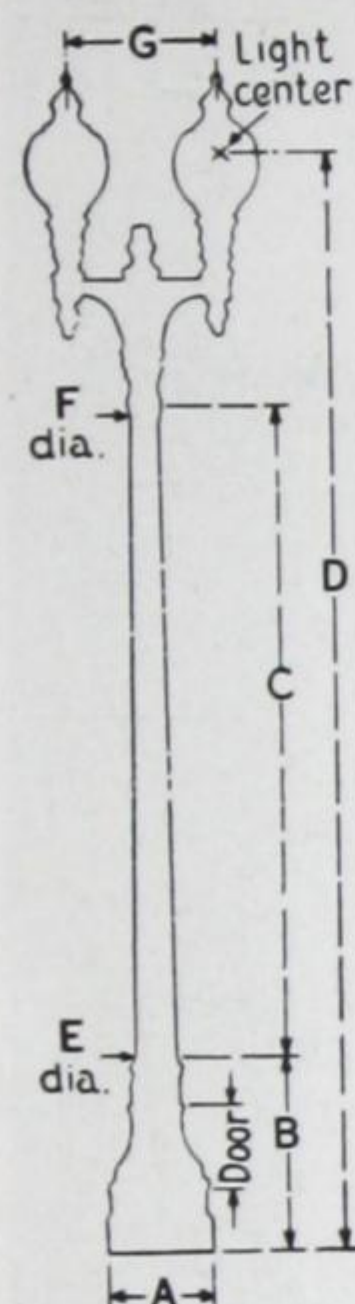


Fig. 9

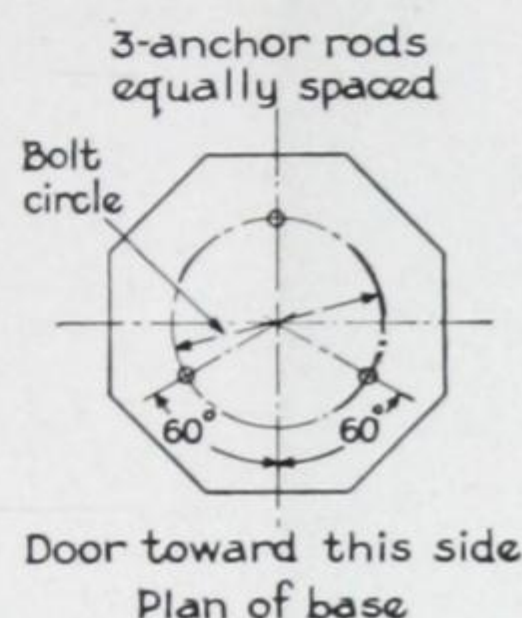


Fig. 10

DESIGN NO.	BOLT CIRCLE DIAM in In.	Projection Anchor Rods Above Foundation	ANCHOR ROD Dimensions in In.
1655	14	42	† 1 1/4 by 72 Bent°
792	15 1/2	32	5/8 by 60 Bent°
2216	15	27 1/2	5/8 by 42 Straight

† Except 1655, which uses 1 by 72 Bent°.

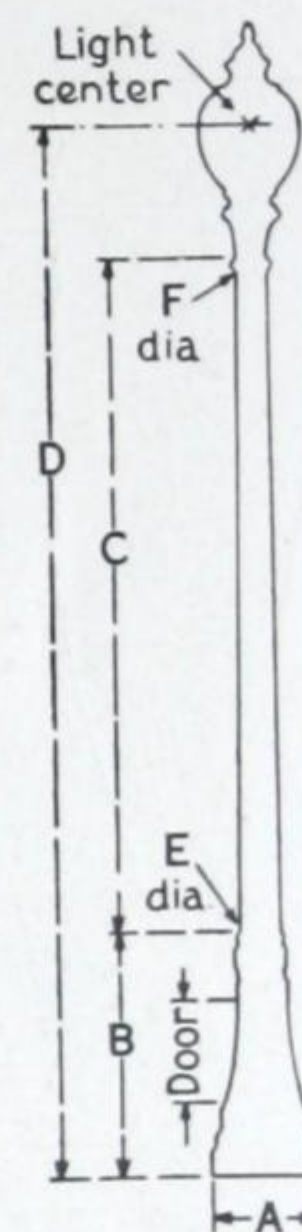


Fig. 11

FORM NO. OF G-E LUMINAIRES AND CASINGS RECOMMENDED

With Union Metal Design No.					
1655		792		2216	
FORM	CASING	FORM	CASING	FORM	CASING
9	E	9	E	8	F, No. 3
12	M, N, O, 19	12	M, N, O, 19	18A	S
18B	R	18B	R	23A	R
38	R	38	R	27	No. 21

UNION METAL DESIGN NO.	A	B	C	* D						E	F	G	DOOR DIMEN	† Largest Type IL Trans to Pass through Door Opening	APPROX. SHIP. WT of Pole	LIST PRICE of Pole Class GO-51								
				FORM NO. G-E LUMINAIRE																				
	In.	In.	Ft-In.	Ft-In.	Ft-In.	Ft-In.	Ft-In.	Ft-In.	Ft-In.	Ft-In.	In.	In.	In.	In.										
1655 1655X11 1655X12 1655X13	Oct. 22 1/4 by 24	38	{ 9-11 10-11 11-11 12-11		18-6 19-6 20-6 21-6	18-8 19-8 20-8 21-8				9 1/2	7 1/2	34	{ 4 1/4 by 7 3/4 by 9 3/4	2500 Lumen	870 923 934 945	\$275.00 278.75 282.50 286.50								
792 792X11 792X13 792X14	Oct. 21 by 22 3/4		29	{ 9-4 1/2 10-11 12-11 13-11		13-5 14-11 16-11 17-11	13-8 15-2 17-2 18-2	13-4 14-10 16-10 17-10					9 1/2		5 or 6 Δ	{ 4 1/4 by 7 3/4 by 9 3/4	2500 Lumen	285 300 315 323	88.00 93.00 98.00 100.50					
§2216 2216X9 2216X10 2216X11	Oct. 18 by 19 1/2			24 1/2	{ 7-11 8-11 9-11 10-11	11-6 12-6 13-6 14-6		11-4 12-4 13-4 14-4	12-1 13-1 14-1 15-1										7 1/2	4 or 4 1/2 Δ	{ 4 1/2 by 8 3/4 by 7 1/2	2500 Lumen	215 221 227 233	71.00 73.00 75.00 77.00

* Light-center dimensions are given for luminaires illustrated above, and will vary slightly for other types of glassware.

† Maximum sizes placed and accessible through door openings. In some bases larger sizes can be accommodated by special methods. Information available on request.

§ Not in accordance with I.E.S. code of street lighting for any application.

Δ Depends on casing.

° Bent to provide space for transformer or cutout.

Design numbers and prices include anchor bolts but do not include luminaires, transformers, or MAZDA lamps.

When ordering standards, mention form number of G-E luminaires and casing to be used.

Two-light design shafts of three-ply, and single-light of two-ply No. 22 gauge galvanized steel.

Type "A" (Fig. 1 page 18) base construction used on Design No. 1655 and all single-light designs.

Type "B" (Fig. 2 page 18) base construction used on Design No. 1655X11, 1655X12, and 1655X13.

Dimensions are for reference only. For exact dimensions refer nearest sales office.

UNION METAL STEEL LIGHTING STANDARDS

Normandy Design

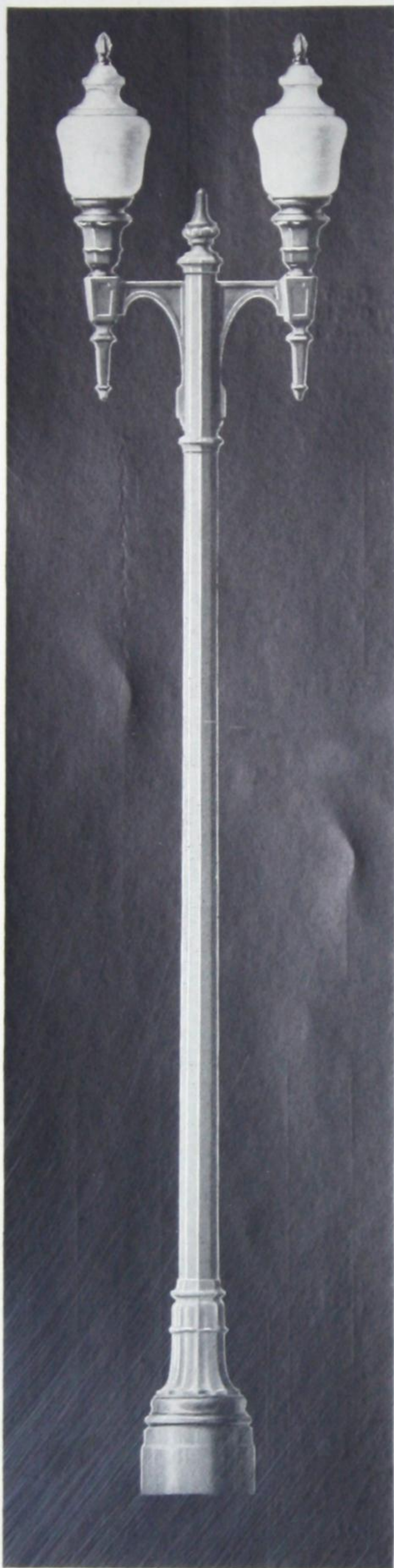


Fig. 1
Design No. 8248

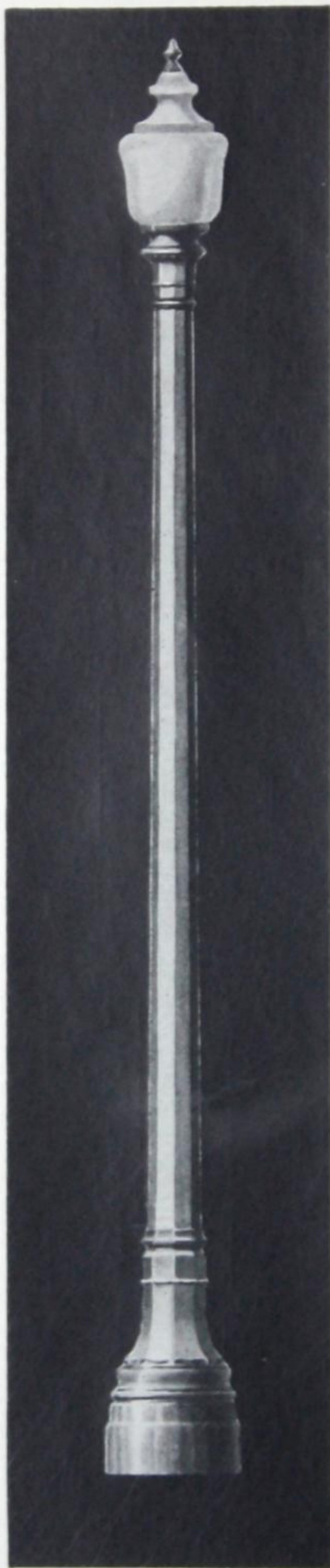


Fig. 2
Design Nos. 2382, 2577

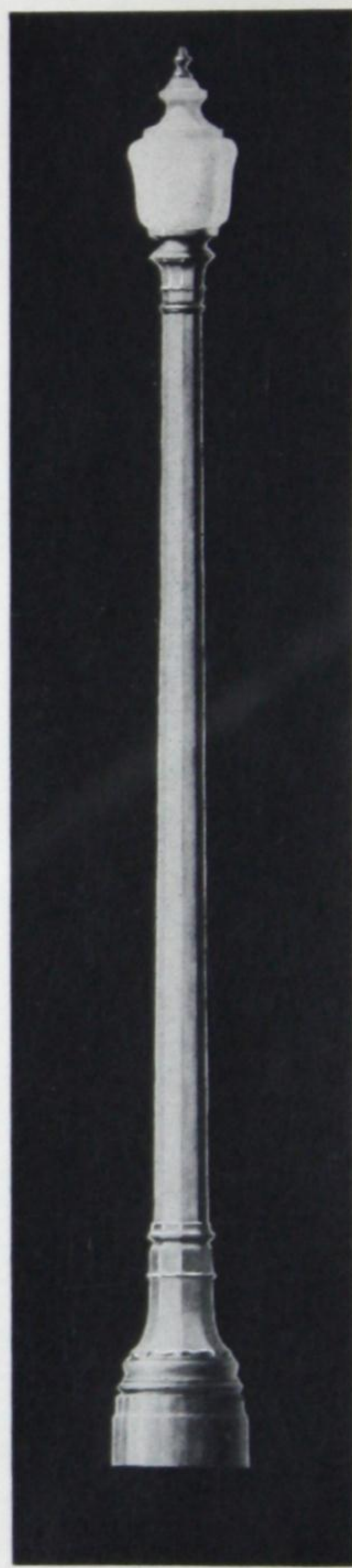


Fig. 3
Design No. 1082

UNION METAL STEEL LIGHTING STANDARDS

NORMANDY DESIGN



Fig. 4
Form 13 G-E luminaire,
No. 13 casing, No. 109-1109
glassware



Fig. 5
Form 16 G-E luminaire,
Q casing No. 118-1118
glassware



Fig. 6
Form 18A G-E luminaire,
S casing



Fig. 7
Form 23A G-E luminaire,
R casing

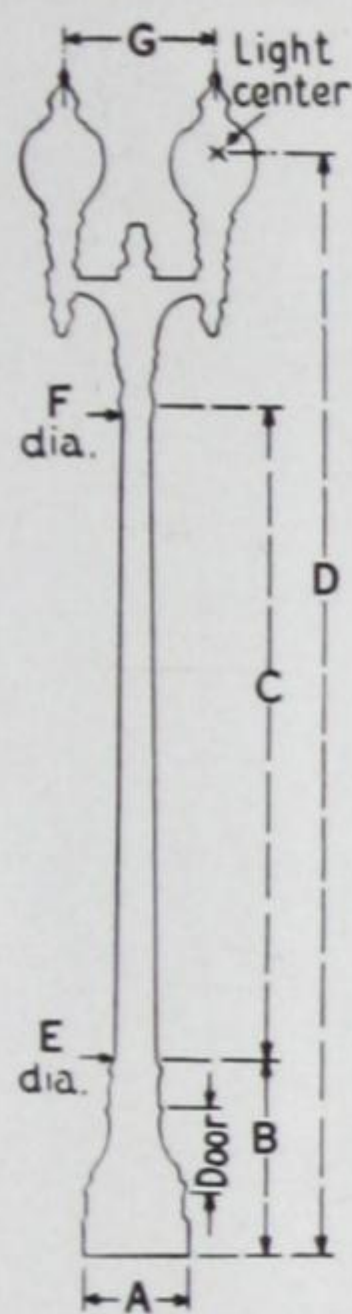


Fig. 8

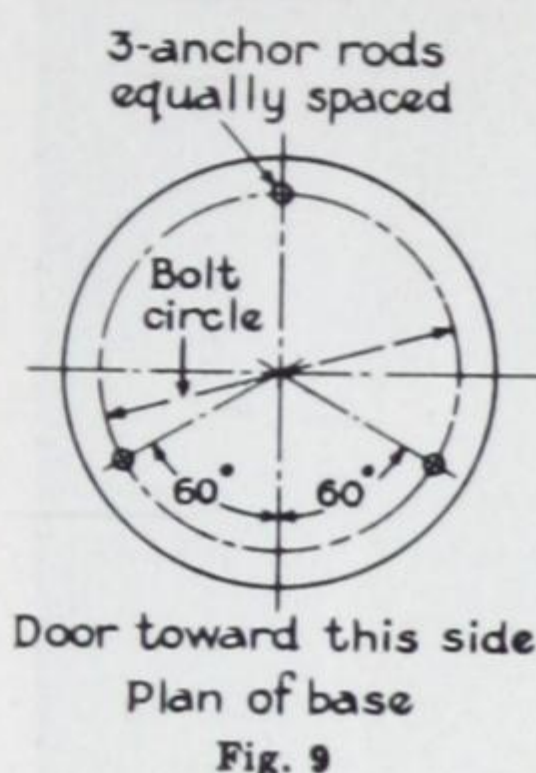


Fig. 9

DESIGN NO.	BOLT CIRCLE DIAM. in In.	Projection Anchor Rods Above Foundation	Anchor Rod Dimensions in In.
8248	15	38	1 by 60 Bent ° Δ
2382	15	38	5/8 by 60 Straight
2577	15	33 1/2	5/8 by 50 Straight
1082	8	28	5/8 by 50 Straight

ΔExcept 8248X10 which uses 3/4 by 60 Bent °.

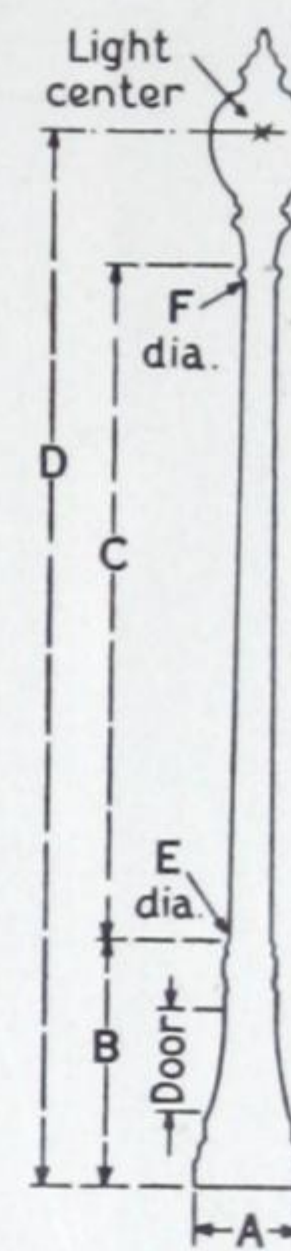


Fig. 10

FORM NO. OF G-E LUMINAIRES AND CASINGS RECOMMENDED

With Union Metal Design No.							
8248		2382		2577		1082	
FORM	CASING	FORM	CASING	FORM	CASING	FORM	CASING
12	M	16	Q	13	J, 13	13	J, 13
16	Q	18B	R	16	Q	18A	S
18	R	38	R	18A	R	23A	R
23	R			23A	R		

UNION METAL DESIGN NO.	A	B	C	* D						E	F	G	DOOR DIMEN	† Largest Type IL Trans to Pass through Door Opening	APPROX SHIP. WT of Pole	LIST PRICE of Pole Class GO-51								
				FORM NO. G-E LUMINAIRE																				
				13	12	16	18A	18B	23A															
	In.	In.	Ft-In.	Ft-In.	Ft-In.	Ft-In.	Ft-In.	Ft-In.	Ft-In.	In.	In.	In.	In.											
8248X10 8248X11 8248	19	35	{ 9-11 10-11 11-11	{ 16-9 17-9 18-9	{ 17-3 18-3 19-3	{ 17-4 18-4 19-4		{ 17-0 18-0 19-0	{ 16-8 17-8 18-8	{ Oct. 6 3/4 by 7 3/8	{ Oct. 5 by 5 3/8	36	{ 5 by 8 1/4 by 9 1/4	10,000 Lumen	520 548 557	\$161.00 164.00 167.00								
2382 2382X11 2382X12 2382X13			19	35	{ 9-11 10-11 11-11 12-8			{ 14-10 15-10 16-10 17-7									{ 14-7 15-7 16-7 17-4		{ Oct. 6 3/4 by 7 3/8	{ Oct. 5 by 5 3/8	{ 5 by 8 1/4 by 9 1/4	10,000 Lumen	305 311 317 323	91.00 93.00 95.00 97.00
2577 2577X9 2577X10 2577X11					17	30 1/2	{ 7-11 8-11 9-11 10-11	{ 11-9 12-9 13-9 14-9									{ 12-6 13-6 14-6 15-6	{ 11-8 12-8 13-8 14-8							{ 11-8 12-8 13-8 14-8	{ Oct. 6 by 6 1/2	{ Oct. 3 9/16 by 3 1/8	{ 3 3/4 by 7 1/2 by 9	2500 Lumen	233 238 243 248	74.00 75.50 77.00 78.50
1082 1082X9 1082X10 1082X11	16	25					{ 7-11 8-11 9-11 10-11	{ 11-5 12-5 13-5 14-5		{ 11-4 12-4 13-4 14-4			{ Oct. 6 by 6 1/2	{ Oct. 3 9/16 by 4	{ 3 1/2 by 6 1/4 by 8	None	185 190 195 200	61.00 62.50 64.00 65.50						

* Light-center dimensions are given for luminaires illustrated above, and will vary slightly for other types of glassware.

† Maximum sizes placed and accessible through door openings. In some bases larger sizes can be accommodated by special methods. Information available on request.

§ Not in accordance with I.E.S. code of street lighting for any application.

° Bent to provide space for transformer or cutout.

Design numbers and prices include anchor bolts but do not include luminaires, transformers, or MAZDA lamps.

When ordering standards, mention form number of G-E luminaires, and casing to be used.

Two-light design shafts of three-ply, and single-light of two-ply No. 22 gauge galvanized steel.

Type "A" (Fig. 1 page 18) base construction used on Design No. 8248X10 and all single-light designs.

Type "B" (Fig. 2 page 18) base construction used on Design No. 8248 and 8248X11.

Dimensions are for reference only. For exact dimensions refer nearest Sales Office.

UNION METAL STEEL LIGHTING STANDARDS

Miscellaneous Designs

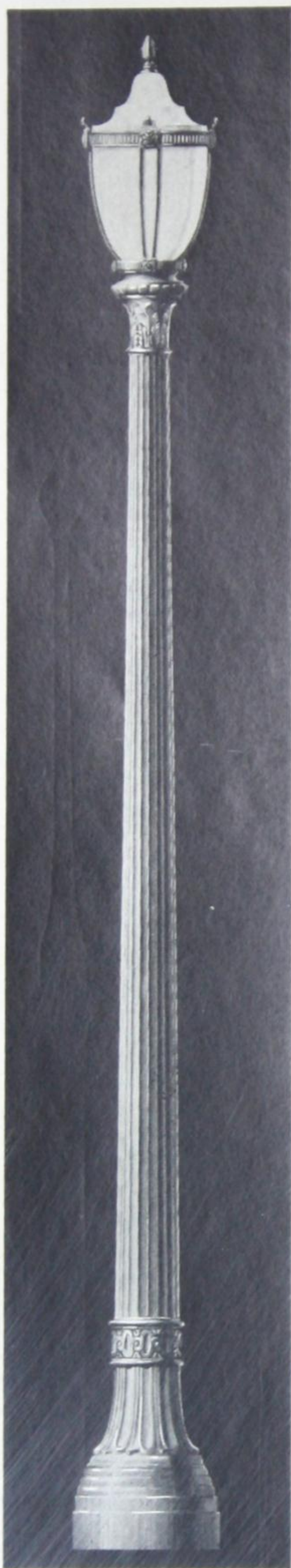


Fig. 1
Design No. 1780

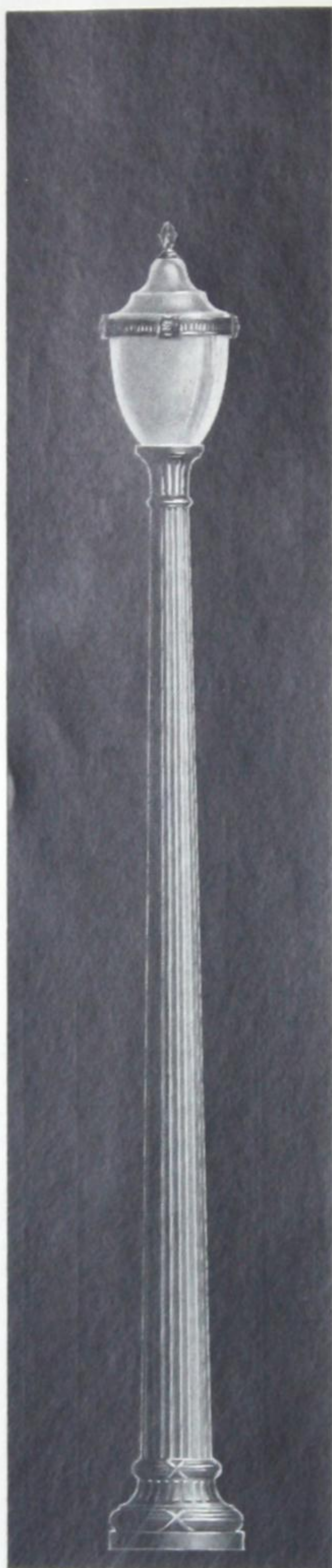


Fig. 2
Design No. 856

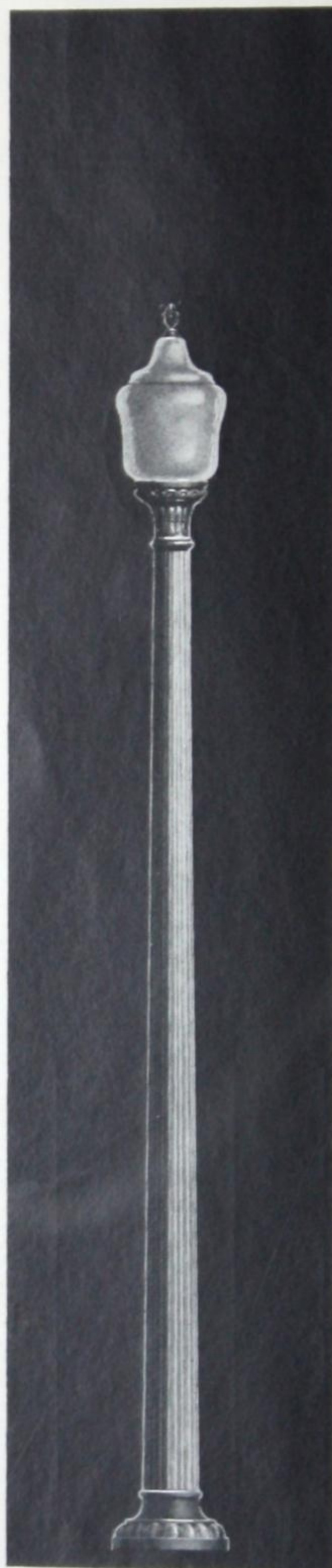


Fig. 3
Design No. 1122

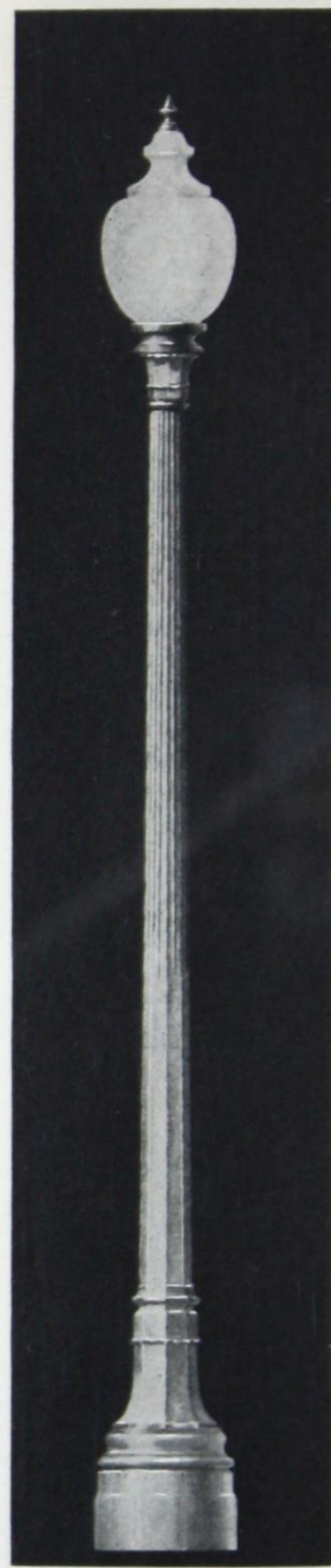


Fig. 4
Design No. 1298

UNION METAL STEEL LIGHTING STANDARDS MISCELLANEOUS DESIGN



Fig. 5
Form 8 G-E luminaire,
F casing, No. 109-1109
glassware



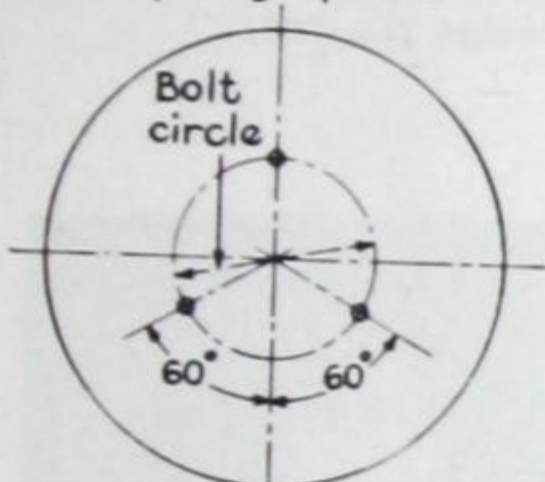
Fig. 6
Form 12 G-E luminaire,
O casing, 123-1123
glassware



Fig. 7
Form 18A G-E luminaire,
S casing

DESIGN NO.	BOLT CIRCLE DIAM in In.	Projection Rods Above Foundation	ANCHOR ROD Dimensions in In.
1780	14	35	5/8 by 60 Straight
1298	8	28	5/8 by 50 Straight
1122	6	9 1/2	5/8 by 36 Straight
856	7	13	5/8 by 24 Straight

3-anchor rods
equally spaced

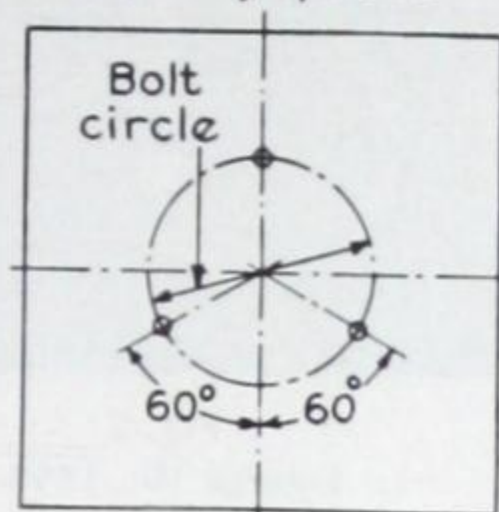


Door toward this side
Plan of base

Fig. 10

Design No. 1780 and 1298

3-anchor rods
equally spaced

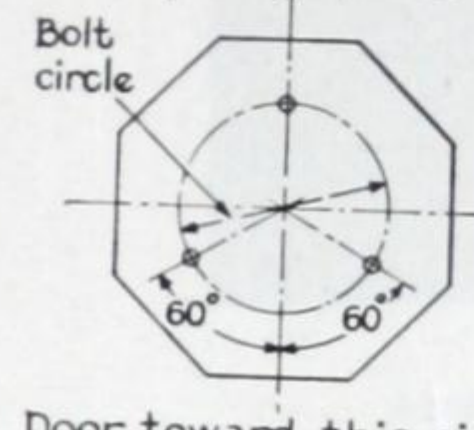


Door toward this side

Fig. 8

Design No. 856

3-anchor rods
equally spaced



Door toward this side
Plan of base

Fig. 9

Design No. 1122

FORM NO. OF G-E LUMINAIRES AND CASINGS RECOMMENDED

With Union Metal Design No.							
1780		1298		856		1122	
FORM	CASING	FORM	CASING	FORM	CASING	FORM	CASING
9	E	8	F, No. 3	8	F, No. 3	8	F, No. 3
12	M, N, O, 19	18A	S	18A	S	18A	S
18B	R	23A	R	23A	R	23A	R
38	R						

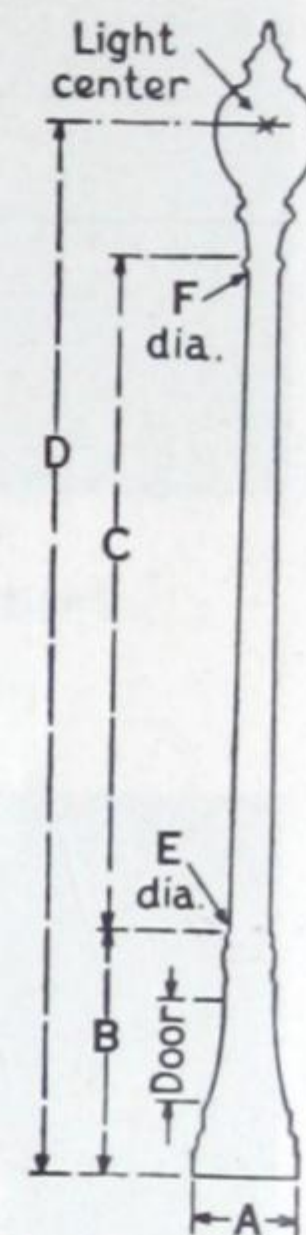


Fig. 11

UNION METAL DESIGN NO.	A	B	C	* D					E	F	G	DOOR DIMEN	†Largest Type IL Trans to Pass through Door Opening	APPROX SHIP. WT. of Pole	LIST PRICE of Pole Class GO-51
				FORM NO. G-E LUMINAIRE											
				8	9	12	18A	18B							
				In.	In.	Ft-In.	Ft-In.	Ft-In.							
\$1780 1780X11 1780X12 1780X13	} 20	32	{ 9-4½ 10-11 11-11 12-11		13-9	13-11		13-9	} 8	5		5 by 11 by 12	15,000 lumen	305	\$87.00
15-3					15-5	15-3		or		317				91.00	
16-3					16-5	16-3		6		323				93.00	
17-3					17-5	17-4		Δ		329				95.00	
°1298 1298X9 1298X10 1298X11	} 16	25	{ 7-11 8-11 9-11 10-11	11-5			11-4	} 6½	4		3½ by 6¼ by 8	10,000 lumen connect before erecting pole†	190	61.00	
12-5				12-4			195						62.50		
13-5				13-4			200						64.00		
14-5				14-4			205						65.50		
‡856 856X9 856X10 856X11	} Sq. 16	10½	{ 7-11 8-11 9-11 10-11	10-0			10-1	} 8	4		4½ by 6½ by 3½	2,500 lumen countersink 6 in. and connect before erect- ing pole		53.00	
11-0				11-1			55.00								
12-0				12-1			57.00								
13-0				13-1			59.00								
π1122 1122X9 1122X10 1122X11	} Oct. 14 by 15	7	{ 7-11 8-11 9-11 10-11	9-9			9-10	} 6½	4		5 by 9 by 4½	None	100	39.00	
10-9				10-10			105						40.50		
11-9				11-10			110						42.00		
12-9				12-10			115						43.50		

*1. Light-center dimensions are given for luminaires illustrated above, and will vary slightly for other types of glassware.

2. Design numbers and prices do not include luminaires, transformers or MAZDA lamps.

3. When ordering standards, mention form number of G-E luminaires and casing to be used.

†4. Maximum sizes placed and accessible through door openings. In some bases larger sizes can be accommodated by special methods.

Information available on request.

Shafts of two-ply No. 22 gauge galvanized steel with bases and tops, cast iron.

Type "A" (Fig. 1 page 18) construction is used on all designs.

Δ Depending on casing.

° Design No. 1298 available with other bases { 17 in. diam—6 1/2-in. shaft } Prices on request.

‡ Design No. 856 available with other bases { 19 in. diam—7 1/2-in. shaft } Prices on request.

‡ Design No. 856 available with other bases { 12 in. square—6 1/2-in. shaft } Prices on request.

* Design No. 1122 available with other bases { 20 in. square—9 1/2-in. shaft } Prices on request.

* Design No. 1122 available with other bases { 10 in. oct—6 1/2-in. shaft } Prices on request.

§ Not in accordance with I.E.S. code of street lighting for any application.

Dimensions are for reference only. For exact dimensions refer nearest Sales Office.

UNION METAL STEEL LIGHTING STANDARDS

Bridge Designs



Fig. 1
Design No. 8994



Fig. 2
Design No. 1292

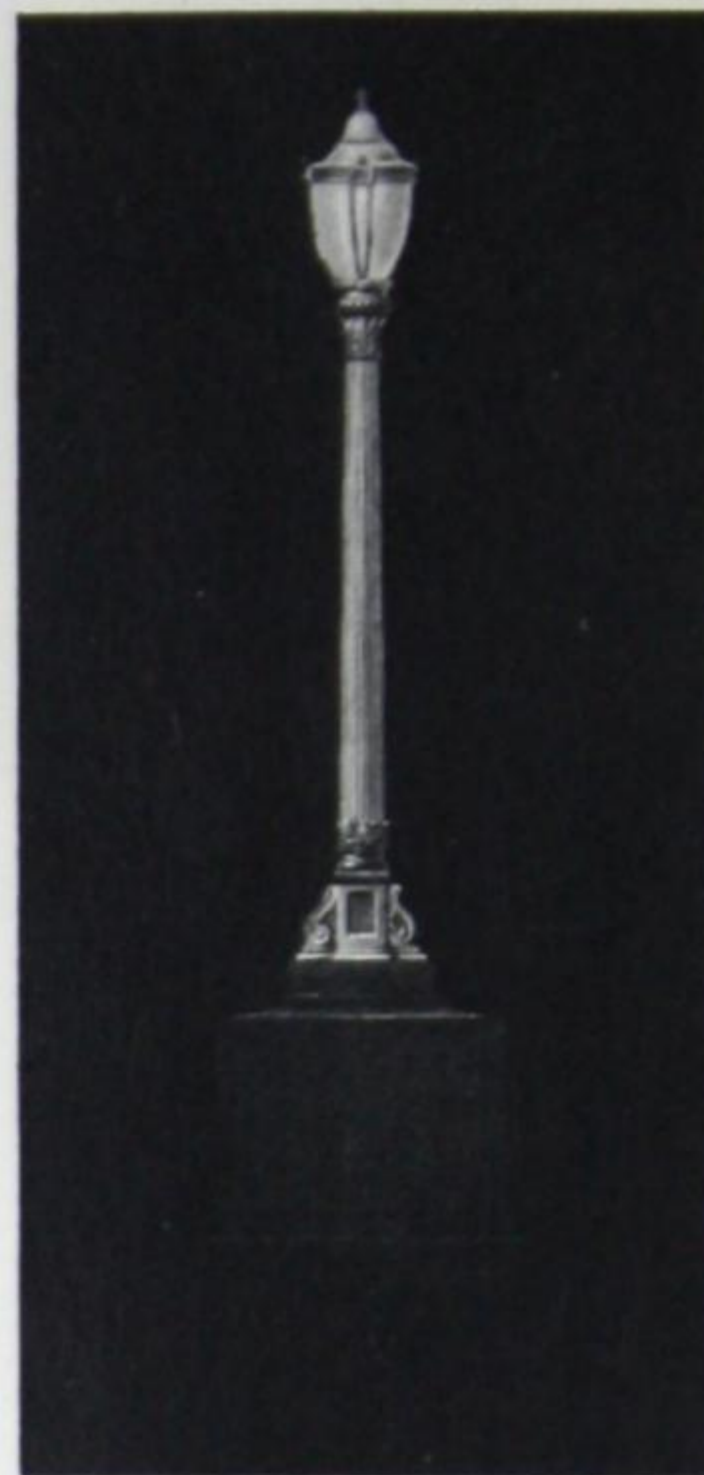


Fig. 3
Design No. 7041

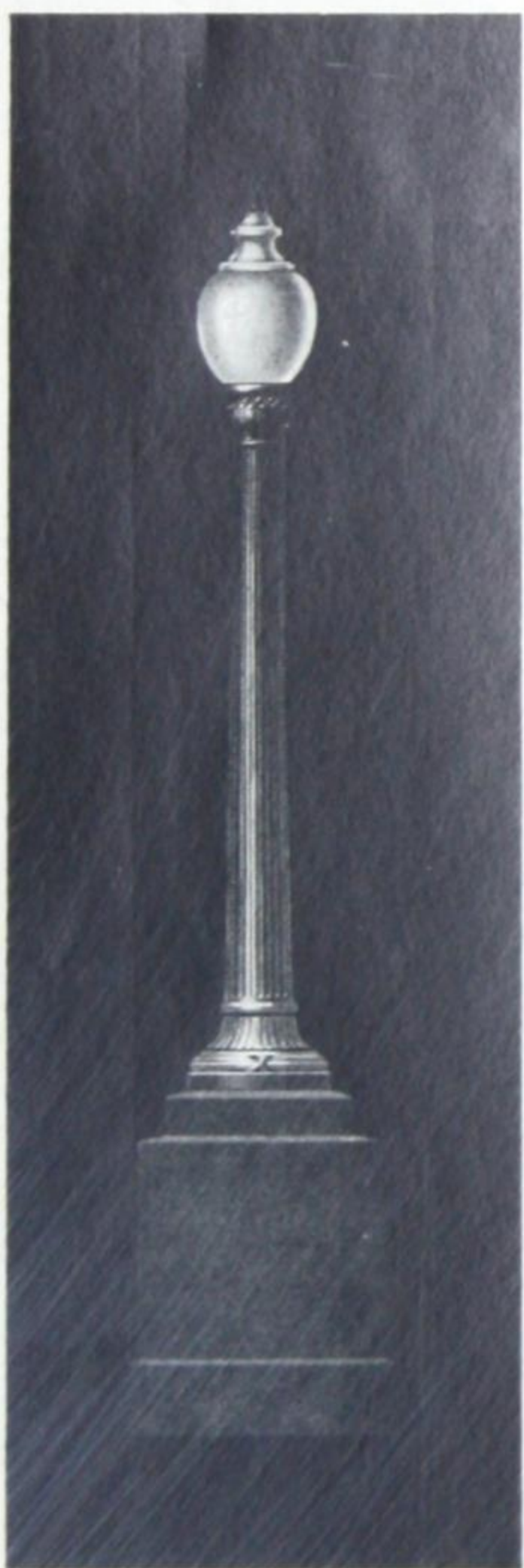


Fig. 4
Design No. 1165



Fig. 5
Design No. 1218



Fig. 6
Design No. 1242

UNION METAL STEEL LIGHTING STANDARDS BRIDGE DESIGNS



Fig. 7

Form 8 G-E luminaire,
F casing, No. 109-1109
glassware



Fig. 8

Form 9 G-E luminaire,
E casing, No. 118-1118
glassware



Fig. 9

Form 12 G-E luminaire,
M casing, No. 124-1124
glassware



Fig. 10

Form 27 G-E luminaire,
No. 21 casing, No. 118-1118
glassware



Fig. 11

Form 18A G-E luminaire,
S casing

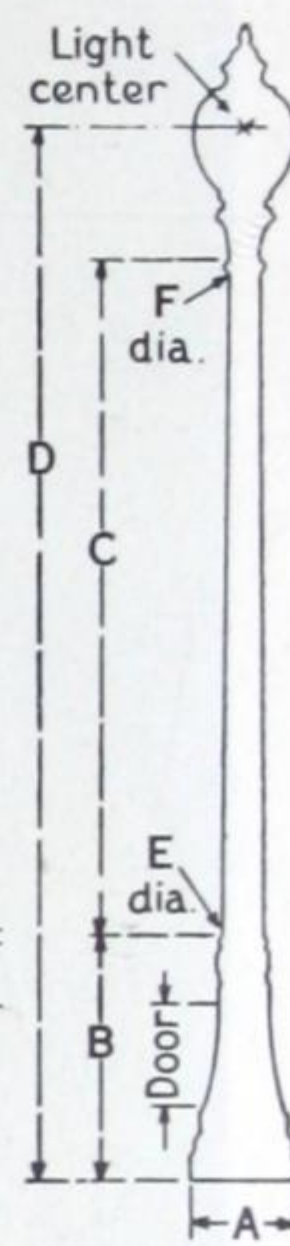
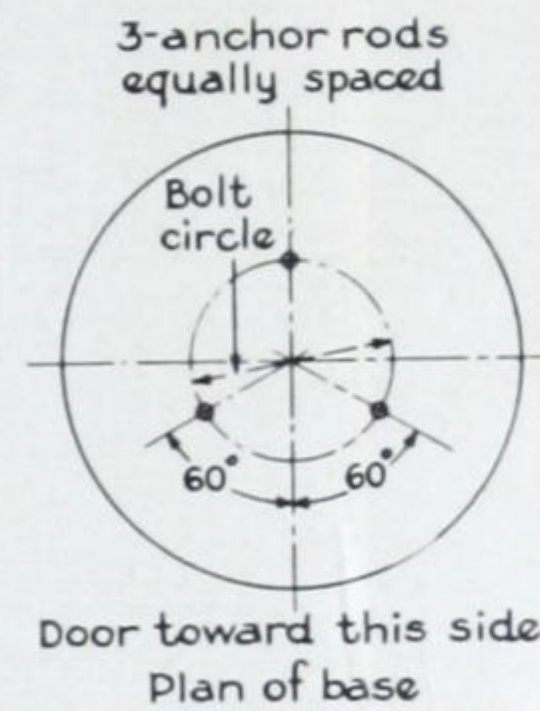
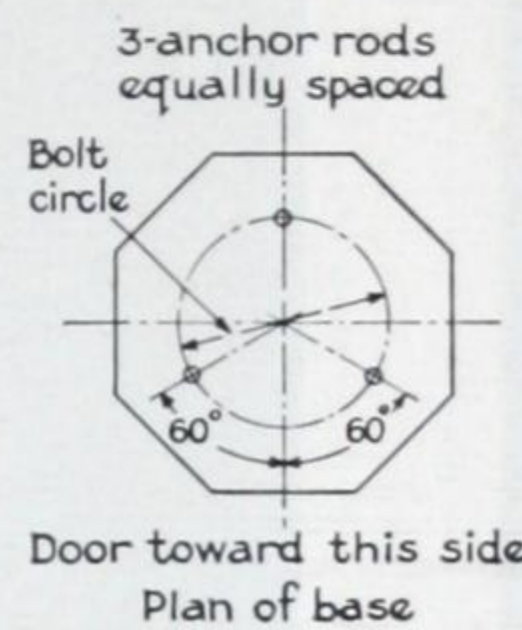
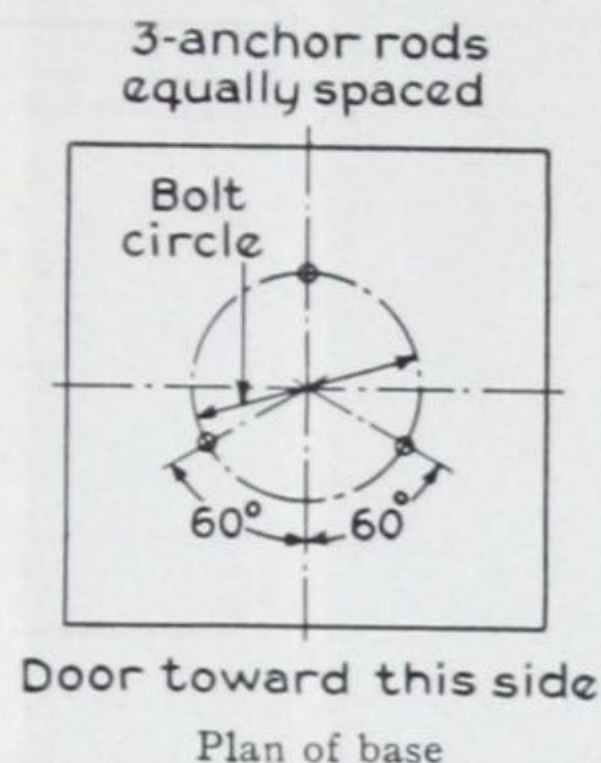
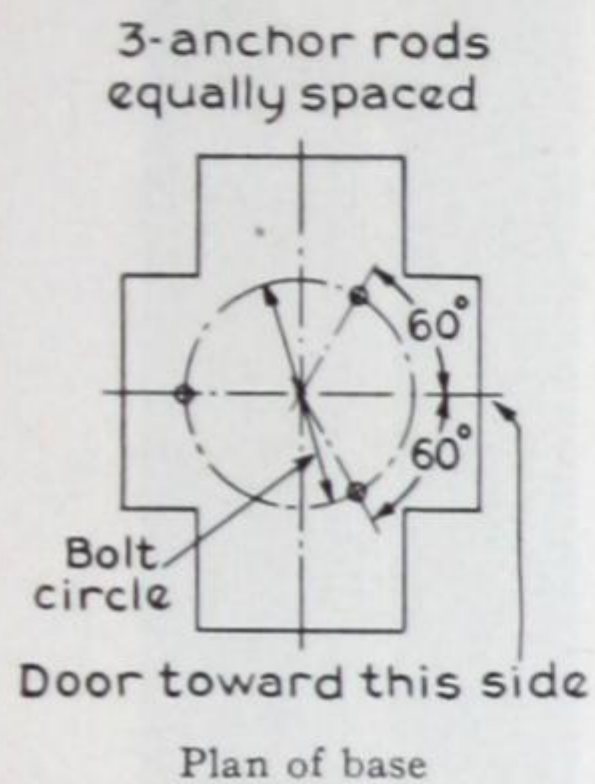


Fig. 12. Design No. 7041, 8994 Fig. 13. Design No. 1165, 1218

Fig. 14. Design No. 1292

Fig. 15. Design No. 1242

DESIGN NO.	BOLT CIRCLE DIAM in In.	Projection Anchor Rods Above Foundation	Anchor Rod Dimensions in In.
8994	9	43	5/8 by 60 Straight
1292	15	27	5/8 by 50 Bent
7041	5	24 3/4	5/8 by 42 Straight
1165	7	15	5/8 by 36 Straight
1218	5	12	5/8 by 24 Straight
1242	8	20	5/8 by 36 Straight

FORM NO. OF G-E LUMINAIRES AND CASINGS RECOMMENDED

With Union Metal Design No.					
1165, 8994		1242, 7041		1218, 1292	
FORM	CASING	FORM	CASING	FORM	CASING
9	E	12	M, N, O, 19	8	F, No. 3
12	M, N, O, 19	18B	R	18A	S
18B	R	38	R	23A	R
38	R			27	No. 21

Fig. 16

UNION METAL DESIGN NO.	A	B	C	*D						E	F	DOOR DIMEN	† Largest Type IL Trans to Pass through Door Opening	APPROX SHIP. WT of Pole	LIST PRICE of Pole Class GO-5	
				FORM NO. G-E LUMINAIRE												
				8	9	12	18A	18B	27							
	In.	In.	Ft-In.	Ft-In.	Ft-In.	Ft-In.	Ft-In.	Ft-In.	Ft-In.	In.	In.	In.				
8994 8994X8 8994X10	Rect. 36 by 15	40	5-11 7-11 9-11		10-11 12-11 14-11	11-2 13-2 15-2		10-11 12-11 14-11		9 1/2	5 or 6 Δ	6 1/2 by 13	10,000 lumen	396 411 426	\$129.00 134.00 139.00	
1292X4 1292X6 1292 1292X10	Oct. 18		24 1/2	3-11 5-11 7-11 9-11	7-3 9-3 11-3 13-3		7-2 9-2 11-2 13-2	8-0 10-0 12-0 14-0	7		4 or 4 1/2 Δ	4 1/2 by 8 by 5 1/2		2500 lumen	181 193 205 217	65.00 69.00 73.00 77.00
7041X4 7041 7041X7 7041X8				21 3/4	3-11 4-11 6-11 7-11		7-7 8-7 10-7 11-7	7-4 8-4 10-4 11-4			7	3 5/8 by 5 5/8			None	155 161 173 179	59.00 61.00 65.00 67.00
1165 1165X6 1165X7 1165X9		12 1/4			4-11 5-11 6-11 8-11	7-7 8-7 9-7 11-7	7-10 8-10 9-10 11-10	7-7 8-7 9-7 11-7		9 1/2		5 or 6 Δ	4 3/4 by 9 1/4 by 6			None	150 158 166 174	59.00 61.50 64.00 69.00
†1218 1218X5 1218X6 1218X8	9 1/4		3-8 4-11 5-11 7-11		5-8 6-11 7-11 9-11		5-7 6-10 7-10 9-10	6-5 7-8 8-8 10-8	5 1/2			4 or 4 1/2 Δ	3 1/4 by 6 1/4 by 3 1/4	None			80 90 95 105	40.00 41.50 43.00 46.00
1242X5 1242 1242X7 1242X9			17	4-11 5-11 6-11 8-11		8-2 9-2 10-2 12-2	8-0 9-0 10-0 12-0	6 1/2			4 or 5 Δ	5 by 9 by 6 1/2	None		145 150 155 165		53.50 55.00 56.50 59.50

* Light-center dimensions are given for luminaires illustrated above, and will vary slightly for other types of glassware.

† Maximum sizes placed and accessible through door openings. In some bases larger sizes can be accommodated by special methods. Information available on request.

Δ This design available with 16-in. square base and 8-in. bottom shaft diameter for use with Form 12 luminaire. Price on request.

○ Depending on casing.

○ Bent to provide space for transformer or cutout.

Design numbers and prices include anchor bolts but do not include luminaires, transformers, or MAZDA lamps.

When ordering standards, mention form number of G-E luminaires and casing to be used.

Plated shafts of two plies of No. 22 gauge galvanized steel. Bases and top of cast iron.

Type A (Fig. 1, page 18) base construction used.

Dimensions are for reference only. For exact dimensions refer nearest Sales Office.

UNION METAL FLUTED HEAVY-DUTY STEEL STANDARDS

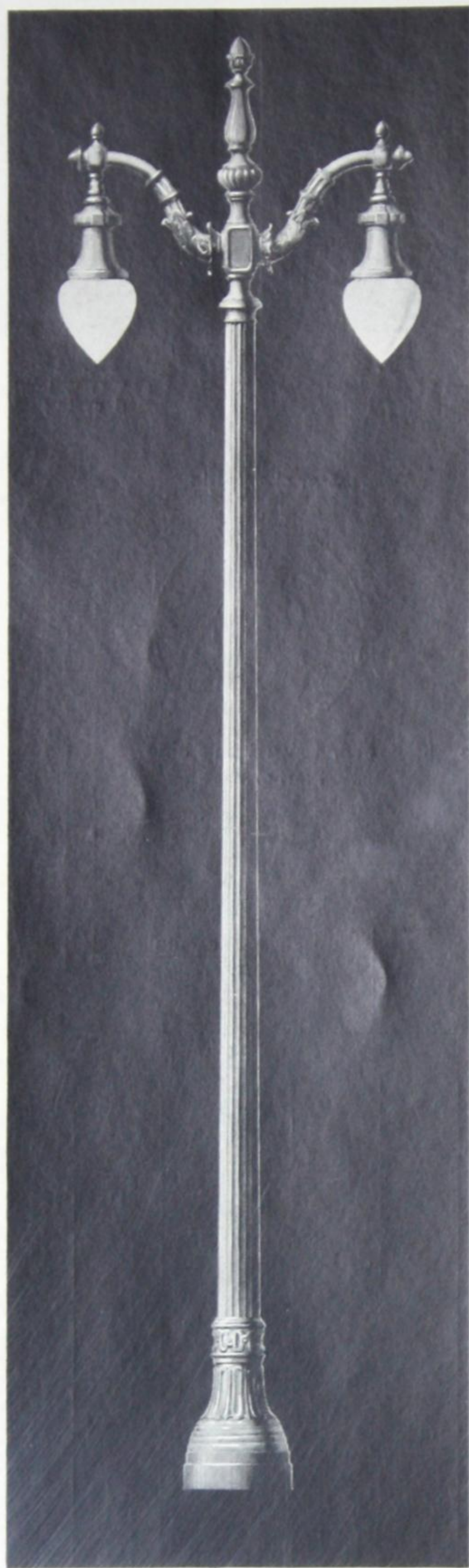


Fig. 1

Design No. 5779X16
 Design No. 5779X18
 Design No. 5779X20
 Design No. 5779X22

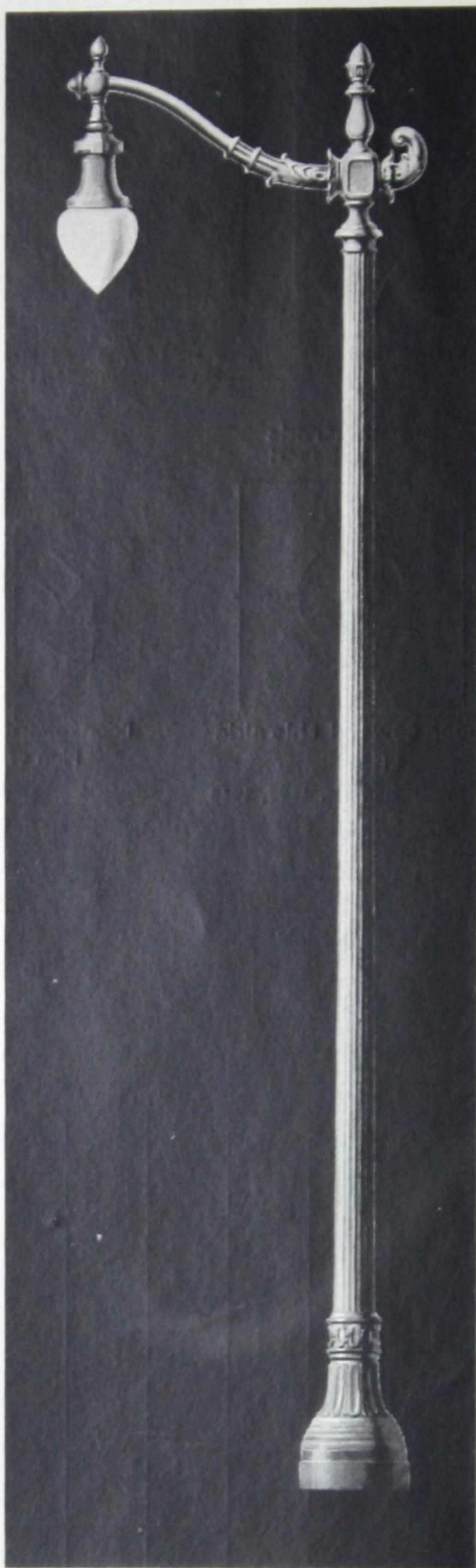


Fig. 2

Design No. 5778X16
 Design No. 5778X18
 Design No. 5778X20
 Design No. 5778X22



Fig. 3

Design No. 3766X13
 Design No. 3766X14
 Design No. 3766X16
 Design No. 3766X17

UNION METAL FLUTED HEAVY-DUTY STEEL STANDARDS



Fig. 4
Form 9 G-E luminaire,
E casing, No. 118-1118
glassware



Fig. 5
Form 19A G-E luminaire



Fig. 6
Form 32 G-E luminaire
with No. 146 globe

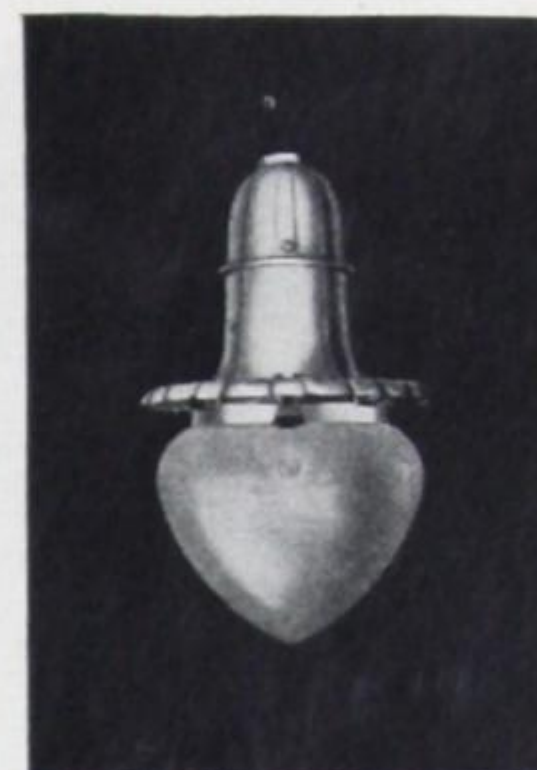


Fig. 7
Form 45L G-E luminaire
with No. 166 globe

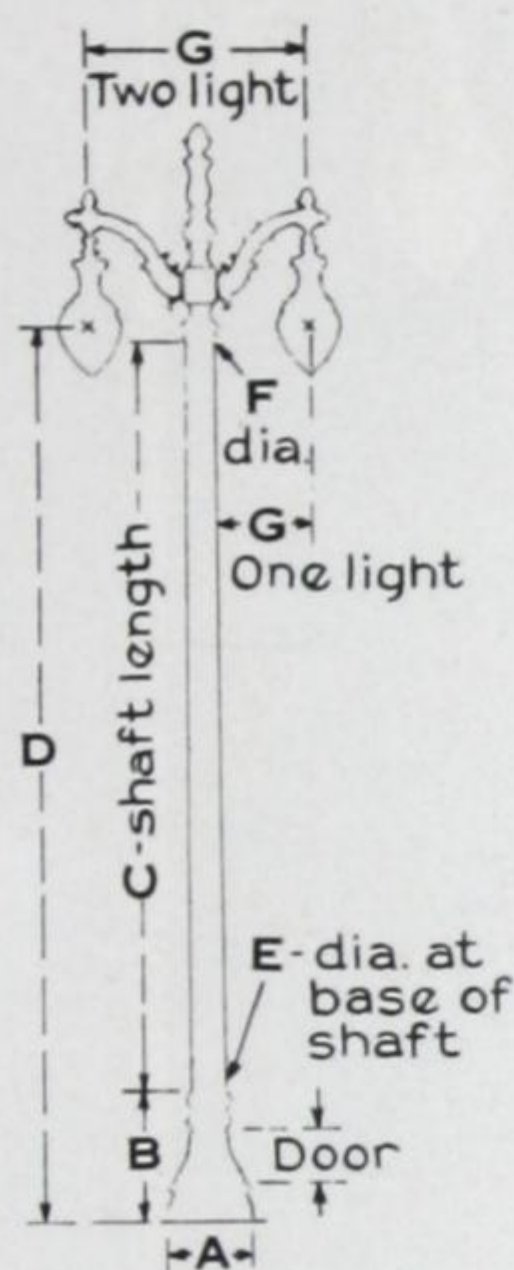


Fig. 8

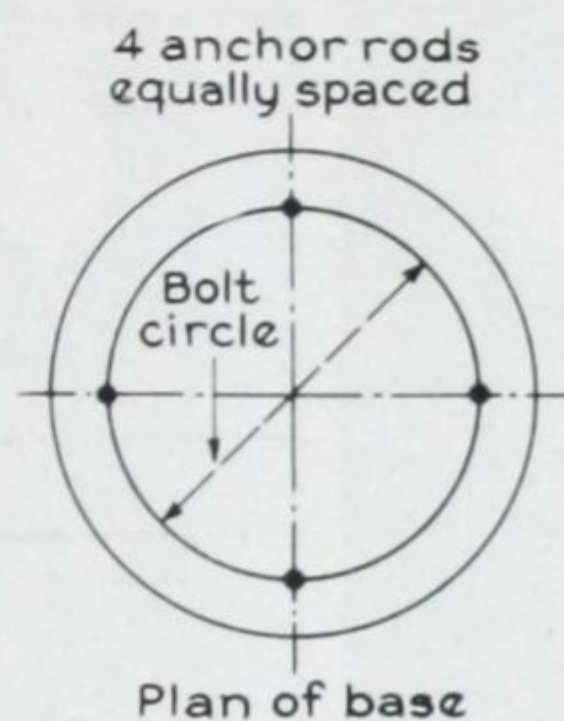


Fig. 9

DESIGN NO.	BOLT CIRCLE DIAM in In.	Projection Rods Above Foundation	Anchor Rod Dimensions in In.
5779X16	15	4 1/2	1 by 40 Bent°
5779X18	15	4 1/2	
5779X20	15	4 1/2	
5779X22	15	4 1/2	
5778X16	15	4 1/2	3/4 by 40 Bent°
5778X18	15	4 1/2	
5778X20	15	4 1/2	
5778X22	15	4 1/2	
3766X13	15	4 1/2	3/4 by 40 Bent°
3766X14	15	4 1/2	
3766X16	15	4 1/2	
3766X17	15	4 1/2	

FORM NO. OF G-E LUMINAIRES AND CASINGS RECOMMENDED

With Union Metal Design No.					
5779		5778		3766	
FORM	CASING	FORM	CASING	FORM	CASING
19B		19B		9	E
24B		24B			
32		32			
45		45L			

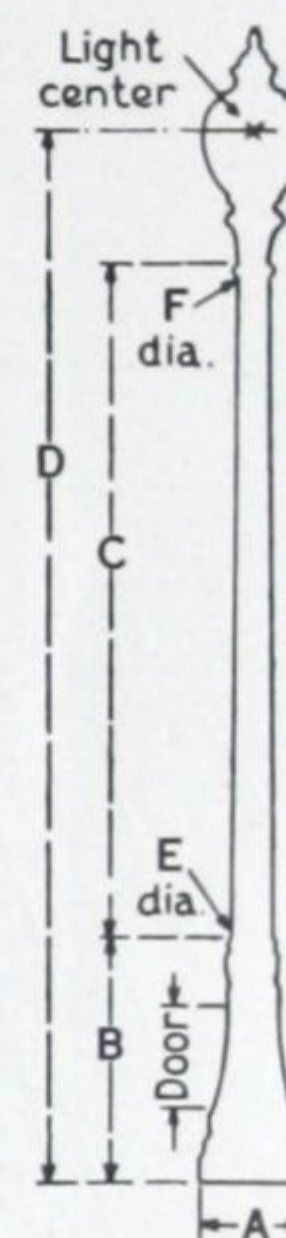


Fig. 10

UNION METAL DESIGN NO.	A	B	C	*D					E	F	G	DOOR DIMEN	†Largest Type IL Trans to Pass through Door Opening	APPROX SHIP. WT of Pole	LIST PRICE of Pole									
				FORM NO. G-E LUMINAIRE																				
				9	19B	24	32	45																
In.	In.	Ft-In.	Ft-In.	Ft-In.	Ft-In.	Ft-In.	Ft-In.	Ft-In.	In.	In.	In.	In.												
5779X16 5779X18 5779X20 5779X22	21	33	16-0 18-0 20-0 22-0		19-7 21-7 23-7 25-7	19-9 21-9 23-9 25-9	19-0 21-0 23-0 25-0	19-7 21-7 23-7 25-7	8¾ 8¾ 8¾ 8¾	6.51 6.23 5.95 5.67	55	6 by 13½ by 19	15,000 lumen		Price on application									
5778X16 5778X18 5778X20 5778X22			21	33	16-0 18-0 20-0 22-0		19-9 21-9 23-9 25-9	19-11 21-11 23-11 25-11	19-2 21-2 23-2 25-2	19-9 21-9 23-9 25-9						8¾ 8¾ 8¾ 8¾	6.51 6.23 5.95 5.67	48	6 by 13½ by 19	15,000 lumen				
3766X13 3766X14 3766X16 3766X17					21	33	13-0 14-0 16-0 17-0	17-6 18-6 20-6 21-6													8¾ 8¾ 8¾ 8¾	6.93 6.79 6.51 6.37	6 by 13½ by 19	15,000 lumen

* Light-center dimensions are given for luminaires illustrated above and will vary slightly for other types of glassware.

† Maximum sizes placed and accessible through door openings. In some bases larger sizes can be accommodated by special methods. Information available upon request.

° Bent to provide space for transformer or cutout.

Design numbers and prices include anchor bolts but do not include luminaires, transformers, or MAZDA lamps.

When ordering standards, mention form number of G-E luminaires and casing to be used.

Shafts of No. 11 gauge steel. Type "JJ" (Fig. 6, page 19) base construction used on all designs.

Dimensions are for reference only. For exact dimensions refer nearest Sales Office.

UNION METAL FLUTED HEAVY-DUTY STEEL STANDARDS WITH PENDENT BRACKETS

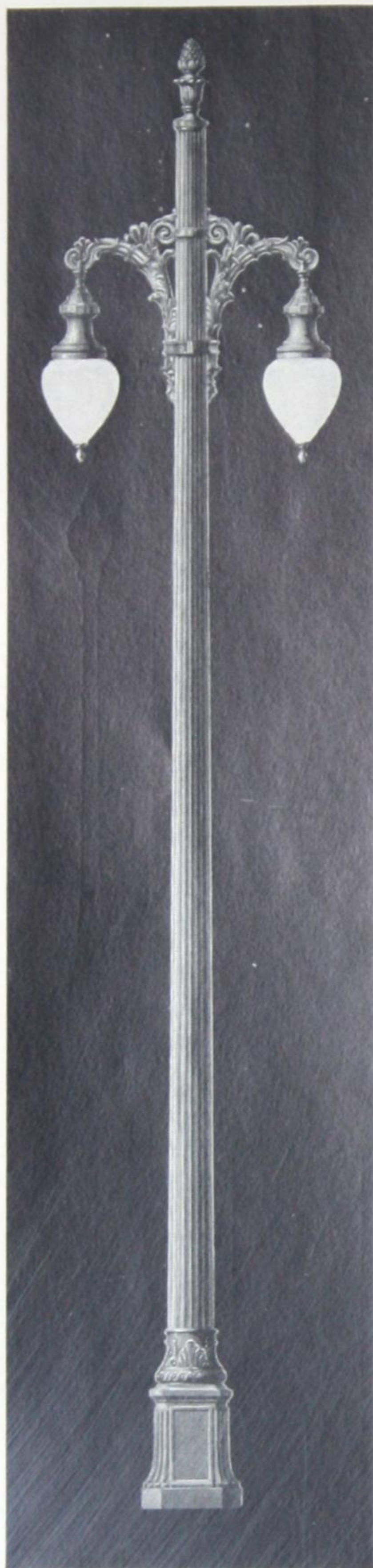


Fig. 1
Design No. 5772

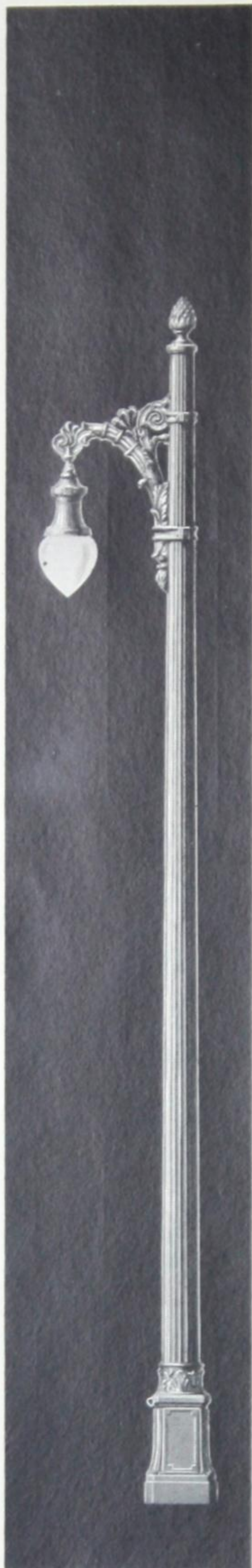


Fig. 2
Design No. 5771

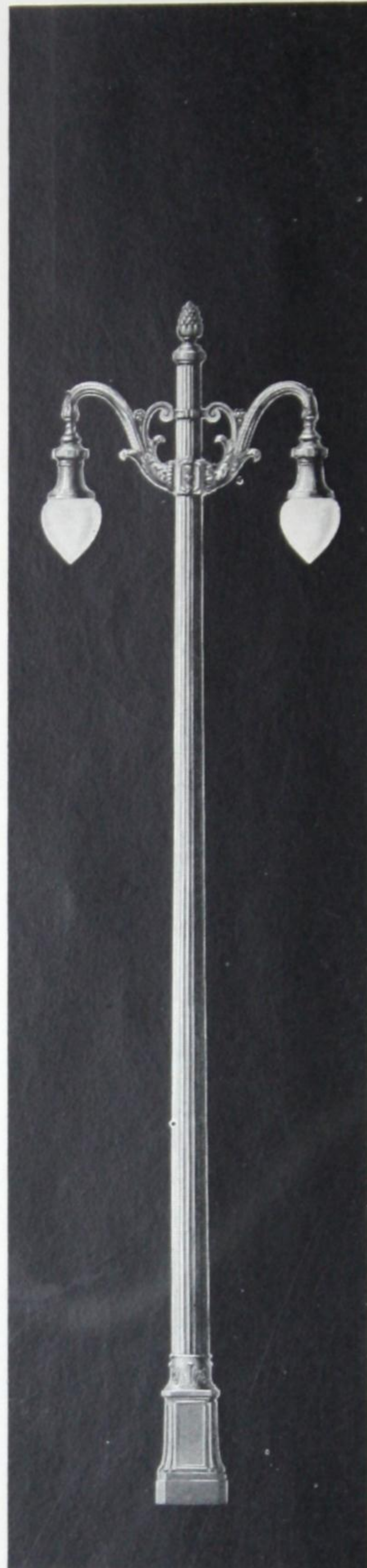


Fig. 3
Design No. 5806

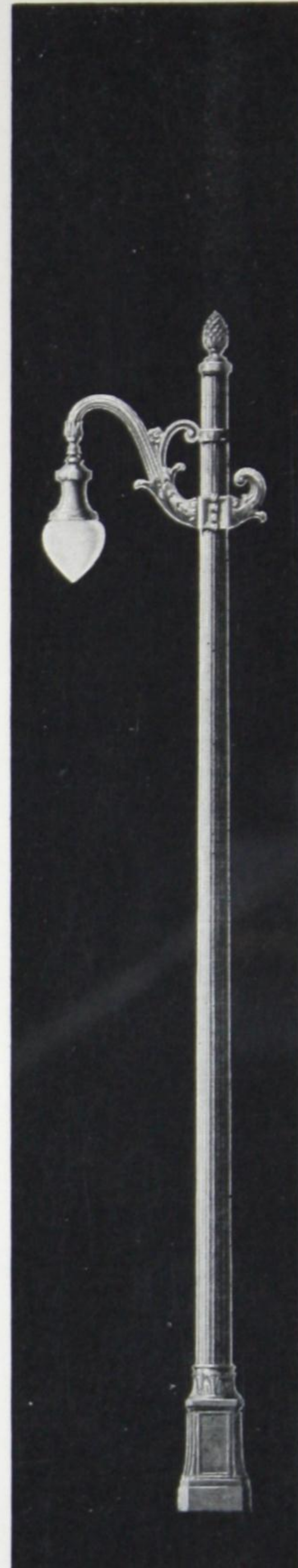


Fig. 4
Design No. 5805

UNION METAL FLUTED HEAVY-DUTY STEEL STANDARDS WITH PENDENT BRACKETS

(For use with strain wires apply nearest sales office)



Fig. 5
Form 19B G-E luminaire



Fig. 6
Form 32, G-E luminaire
with No. 146 globe



Fig. 7
Form 32B G-E luminaire
with No. 157 globe

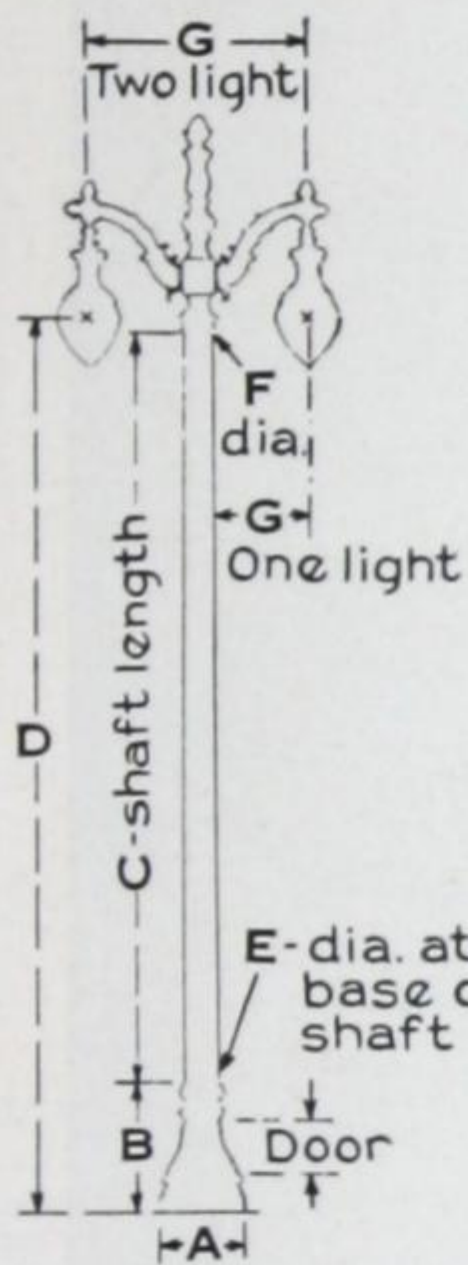
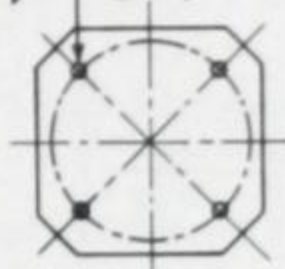


Fig. 8

Four anchor rods
equally spaced



Plan of base

Fig. 9

DESIGN NO.	BOLT CIRCLE DIAM. in In.	Projection Rods Above Foundation	ANCHOR ROD Dimensions in In.
5772	22	31 3/8	1 1/2 by 80 1 by 80
5771	16	27 1/2	
5806	16	27 1/2	
5805	16	27 1/2	

FORM NO. OF G-E LUMINAIRES AND CASINGS RECOMMENDED

With Union Metal Design No.			
5772	5771	5806	5805
FORM	FORM	FORM	FORM
19B 24 32 32B	19B 24 32 32B	19B 24 32 32B	19B 24 32 32B

UNION METAL DESIGN NO.	A	B	C	* D			E	F	G	DOOR DIMEN	† Largest Type IL Tran. to Pass through Door Opening	APPROX SHIP. WT of Pole	LIST PRICE of Pole
				FORM NO. G-E LUMINAIRE									
				19B	24	32							
	In.	In.	Ft-In.	Ft-In.	Ft-In.	Ft-In.	In.	In.	In.	In.			
5772X25 5772X27 5772X30	25 by 25	45	25-0 27-0 30-0	23-4 25-4 28-4	23-6 25-6 28-6	23-0 25-0 28-0	12 12 12	8.5 8.22 7.80	24	11 ½ by 20¼	15,000 lumen	1567 1591 1623	Price on application
5771X20 5771X22 5771X24	18 by 18	35 ½	20-0 22-0 24-0	18-4 20-4 22-4	18-6 20-6 22-6	18-0 20-0 22-0	8.5 8.5 8.5	5.70 5.42 5.14	24	8 ⅞ by 15	15,000 lumen	757 771 786	
5806X19 5806X21 5806X23	18 by 18	35 ½	19-0 21-0 23-0	18-4 20-4 22-4	18-6 20-6 22-6	18-0 20-0 22-0	8.5 8.5 8.5	5.84 5.56 5.28	27	8 ⅞ by 15	15,000 lumen	818 834 850	
5805X19 5805X21 5805X23	18 by 18	35 ½	19-0 21-0 23-0	18-4 20-4 22-4	18-6 20-6 22-6	18-0 20-0 22-0	8.5 8.5 8.5	5.84 5.56 5.28	33	8 ⅞ by 15	15,000 lumen	833 849 865	

* Light-center dimensions are given for luminaires illustrated above and will vary slightly for other types of glassware.

† Maximum sizes placed and accessible through door openings. In some bases larger sizes can be accommodated by special methods. Information available upon request.

Design numbers and prices include anchor bolts but do not include luminaires, transformers, or MAZDA lamps.

When ordering standards, mention form number of G-E luminaires and casing to be used.

Fluted shafts of No. 11 gauge steel with bases and brackets of cast iron. Bases of Type "EEG" (Fig. 5 page 19) construction.

Dimensions are for reference only. For exact dimensions refer nearest Sales Office.

UNION METAL FLUTED HEAVY-DUTY STEEL LIGHTING STANDARDS

With Pendant Brackets



Fig. 1
Design Nos. 5784, 5787

Also
Available with
Octagonal
Steel Shaft



Fig. 2
Design No 5780

UNION METAL FLUTED HEAVY-DUTY LIGHTING STANDARDS WITH PENDENT BRACKETS



Fig. 3

Form 19A G-E luminaire



Fig. 4

Form 25B G-E luminaire with No. 108 globe

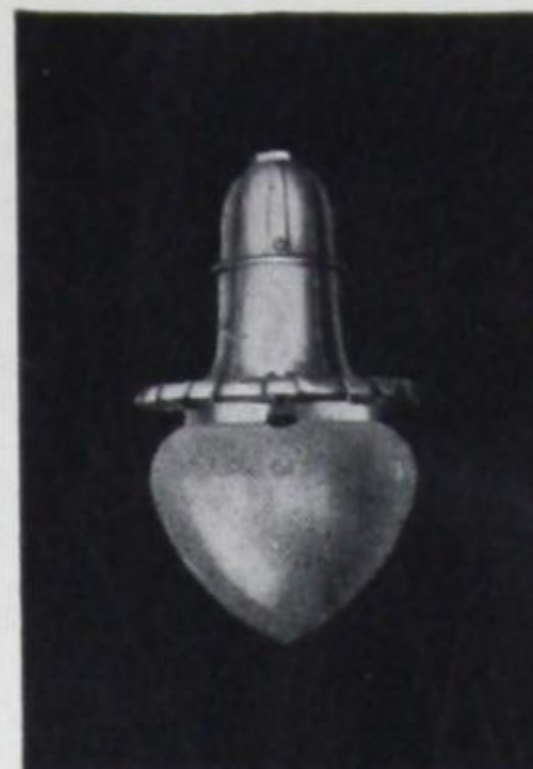


Fig. 5

Form 45L G-E luminaire with No. 166 globe



Fig. 6

Form 52 G-E luminaire with 11-in. bowl refractor

Any suspension type G-E Novalux luminaires can be used on these standards.

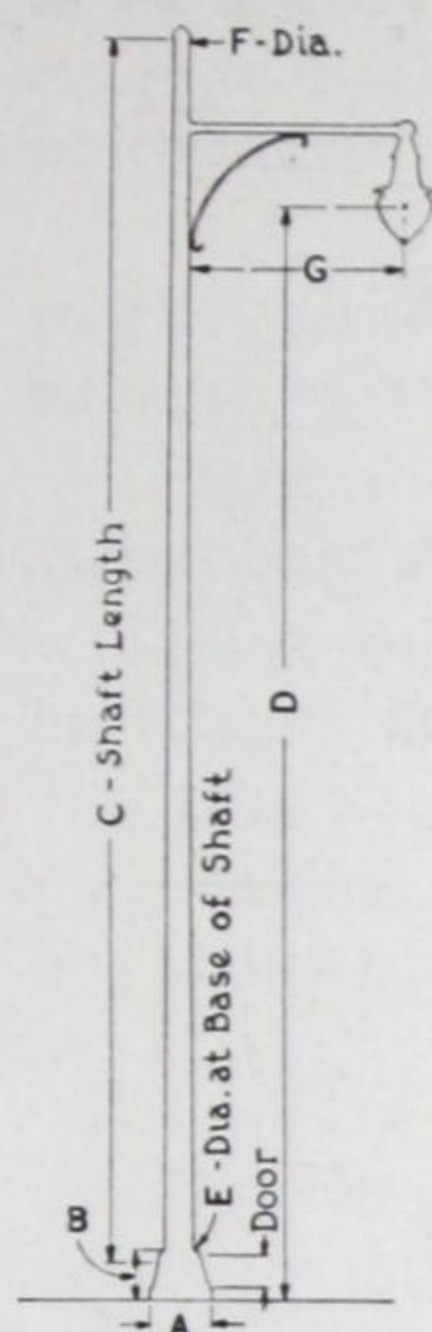
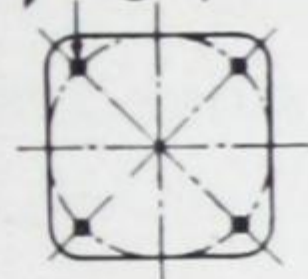


Fig. 7

4-anchor rods equally spaced



Plan of base

Fig. 8

DESIGN NO.	BOLT CIRCLE DIAM in In.	Projection Anchor Rods Above Foundation	ANCHOR ROD Dimensions in In.	DESIGN NO.	BOLT CIRCLE DIAM in In.	Projection Anchor Rods Above Foundation	ANCHOR ROD Dimensions in In.
5780Y7	9	11 1/16	3/4 by 42 Straight	5784Y6	12 1/2	20 7/16	3/4 by 60 Straight
5780Y8	9	11 1/16		5784Y7	12 1/2	20 7/16	
5780Y9	10	2 1/4		5784Y8	12 1/2	20 3/4	
5780Y10	10	2 1/4	1 by 48 Straight	5784Y9	12 1/2	20 3/4	1 by 72 Straight
5780Y11	10 1/2	2 5/8		5784Y10	12 1/2	21 1/8	
5780Y12	11 1/2	2 3/4		5787Y2	16	27 5/16	

UNION METAL DESIGN NO.	A	B	C	* D				E	F	G	DOOR DIMEN	† Largest Type IL Trans to Pass through Door Opening	APPROX SHIP. WT of Pole	LIST PRICE of Pole each net f.o.b. Canton, Ohio
				FORM NO. G-E LUMINAIRE										
				19A	45L	52	25B							
In.	In.	Ft-In.	Ft-In.	Ft-In.	Ft-In.	Ft-In.	Ft-In.	In.	In.	In.	In.			
5780Y7 5780Y8	{ 9½ by 9½ }	3 {	19-0 21-0	16-1 18-1	16-0 18-0	16-5 18-5	16-4 18-4	6 6	3.34 3.06	36 36	No Door	None	200 210	\$29.40 31.40
5780Y9 5780Y10	{ 10½ by 10½ }	3½ {	23-0 25-0	20-1 22-1	20-0 22-0	20-5 22-5	20-4 22-4	7 7	3.78 3.50	48 48	No Door	None	265 273	35.00 36.80
5780Y11	{ 11 by 11 }	3¾	28-0	25-1	25-0	25-5	25-4	7½	3.58	48	No Door	None	335	41.80
5780Y12	{ 12 by 12 }	4¼	33-0	30-1	30-0	30-5	30-4	8½	3.88	72	No Door	None	418	51.00
5784Y6 5784Y7	{ 14½ by 14½ }	21½ {	19-0 21-0	17-7 19-7	17-6 19-6	17-11 19-11	17-10 19-10	6 6	3.34 3.06	36 36	8 by 12	15,000 lumen	352 362	41.30 43.20
5784Y8 5784Y9	{ 14½ by 14½ }	22 {	23-0 25-0	21-7 23-7	21-6 23-6	21-11 23-11	21-10 23-10	7 7	3.78 3.50	48 48	8 by 12	15 000 lumen	417 425	46.90 48.60
5784Y10	{ 14½ by 14½ }	22¼	28-0	26-7	26-6	26-11	26-10	7½	3.58	48	8 by 12	15 000 lumen	495	53.90
5787Y2	{ 18 by 18 }	28¾	33-0	32-1	32-0	32-5	32-4	8½	3.88	72	8½ by 15	15,000 lumen	670	68.30

* Light-center dimensions are given for luminaires illustrated above, and will vary slightly for other types of glassware.

† Maximum sizes placed and accessible through door openings. In some bases larger sizes can be accommodated by special methods. Information available on request.

Design numbers and prices include anchor bolts but do not include luminaires, transformers, or MAZDA lamps.

When ordering standards, mention form number of G-E luminaires and casing to be used.

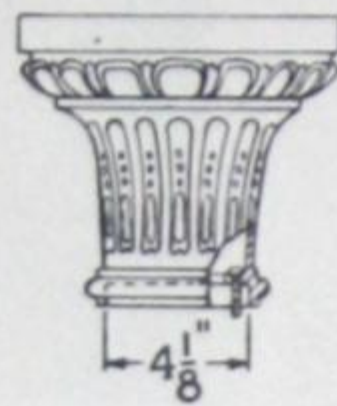
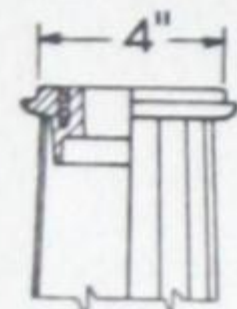
Type E construction (Fig. 3 page 5) used with Design No. 5780.

Type EE construction (Fig. 4 page 5) used with Design No. 5784 and 5787.

Dimensions are for reference only. For exact dimensions apply to nearest Sales Office.

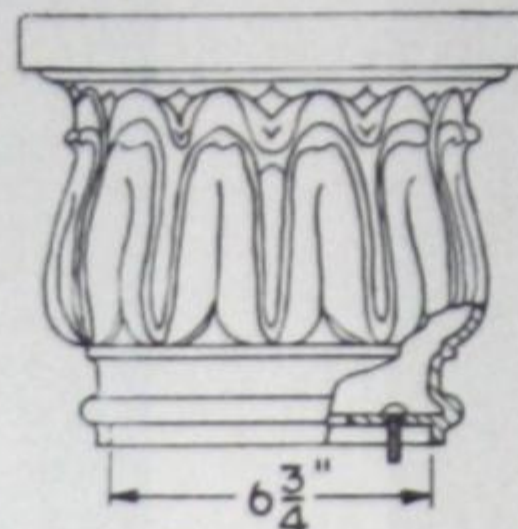
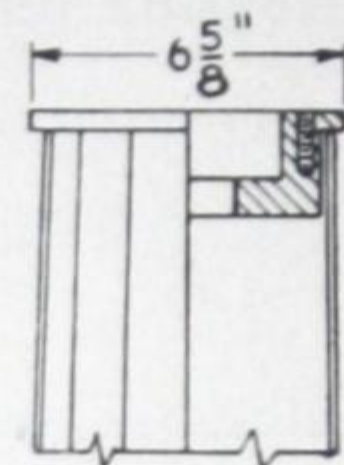
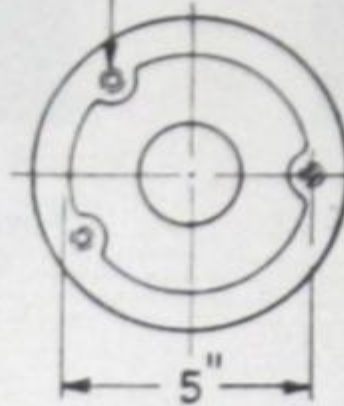
UNION METAL STEEL LIGHTING STANDARDS

CASING AND POLE TOPS


 $\frac{5}{16}$ "-18 tap


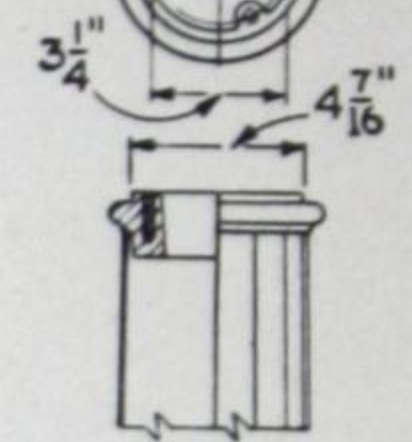
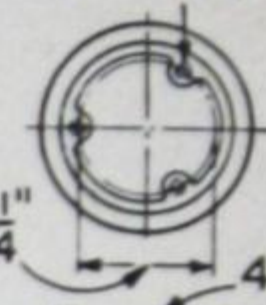
G-E. Form-8

F Casing


 $6\frac{3}{4}$ "
 $\frac{5}{16}$ "-18 tap


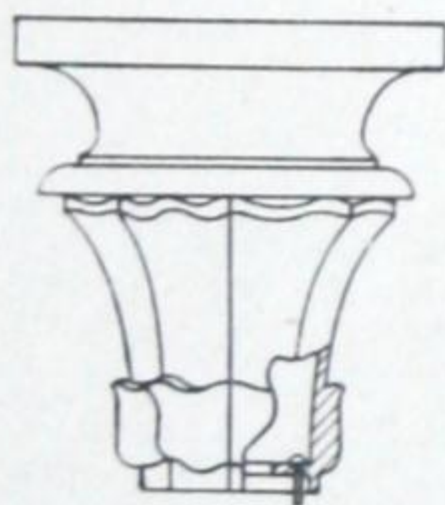
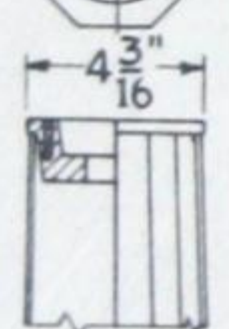
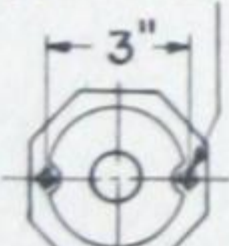
G-E. Form-9

E Casing


 $4\frac{1}{2}$ "
 $\frac{5}{16}$ "-18 tap


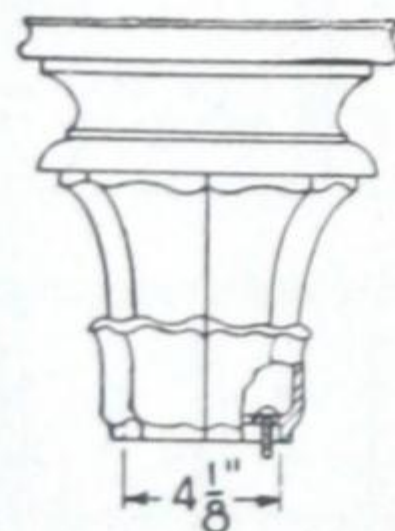
G-E. Form-12

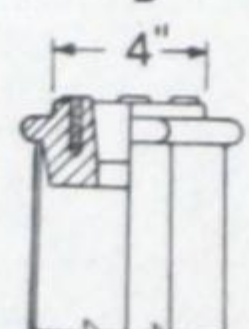
M Casing


 $\frac{5}{16}$ "-18 tap


G-E. Form-13

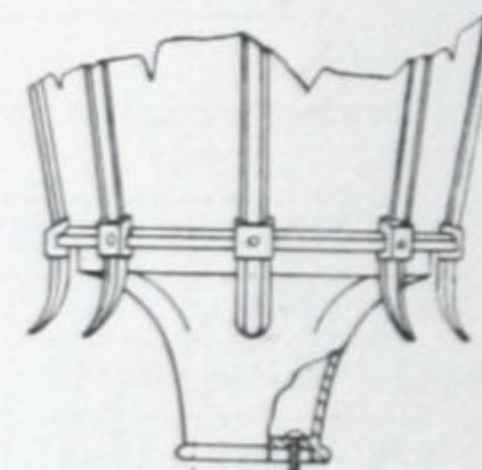
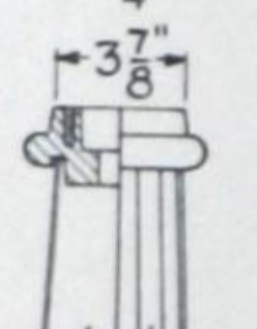
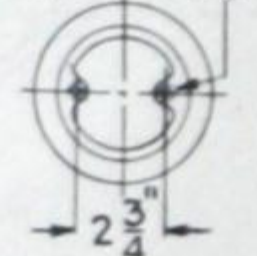
13 Casing


 $4\frac{1}{8}$ "

 $\frac{5}{16}$ "-18 tap


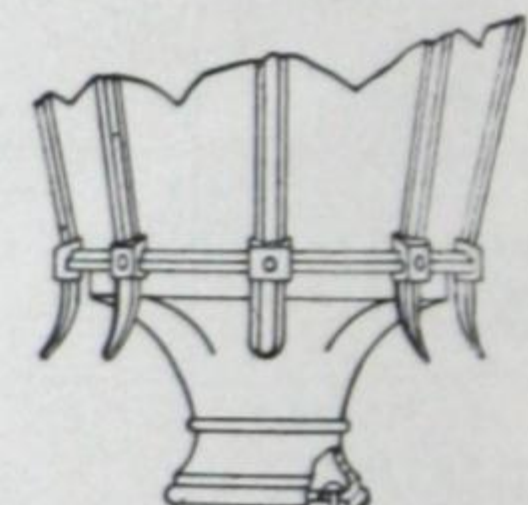
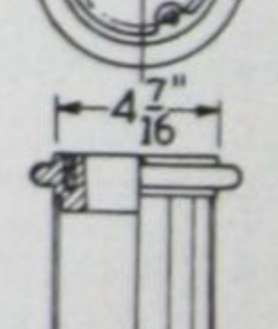
G-E. Form-16

Q Casing


 $4\frac{1}{8}$ "
 $\frac{5}{16}$ "-18 tap


G-E. 18-A Lantern

S Casing


 $4\frac{1}{2}$ "
 $\frac{5}{16}$ "-18 tap


G-E. Form 18-B

RW Casing

KING FERRONITE CAST-IRON LIGHTING STANDARDS

Designs available in groups of similar designs to meet all requirements in one locality.

CONSTRUCTION

Made from aluminum patterns in iron flasks.

Ferronite is special composition of greater strength than ordinary cast iron.

Ferronite insures all delicate details of design to be smooth, clean cut, deep, and perfect. The inside of standards is as smooth as the outside, which prevents damage to cable insulation.

Wall thickness of standards uniform and weight distributed uniformly, which increases strength of standards.

Standards are given a shop priming coat of special hard skin paint.

Final finish to be put on by customer after installation.

Door in base of standard permits ready access for anchoring, making electrical connections, installing transformers, testing, and inspecting.

SAFETY SPIDERS

Used to prevent and limit the fall of standard on violent impact.

Recommended on heavily traveled thoroughfares.

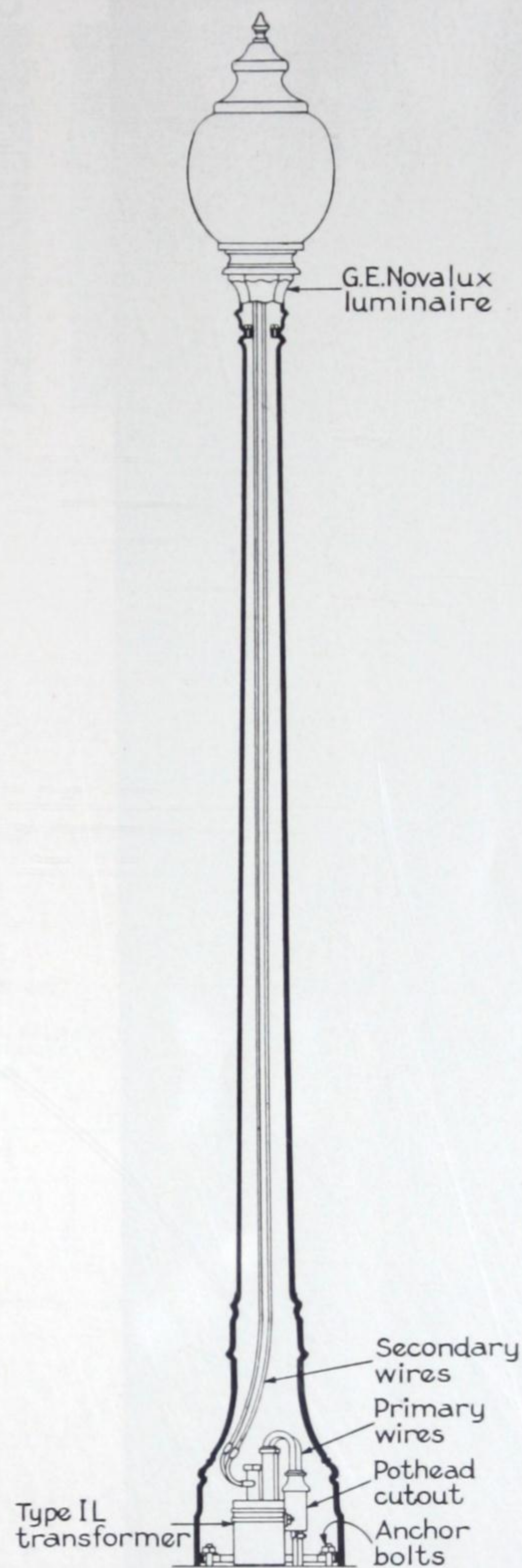
Provided at increased cost on special order only, where not listed.

Safety spider available to permit use of transformers in base of standard.

Pipe reinforcements, where necessary, are provided at increased cost.

CASINGS AND POLE TOPS

See page 58 for casings and pole tops.



Section of King standard

KING FERRONITE CAST-IRON LIGHTING STANDARDS

French Design

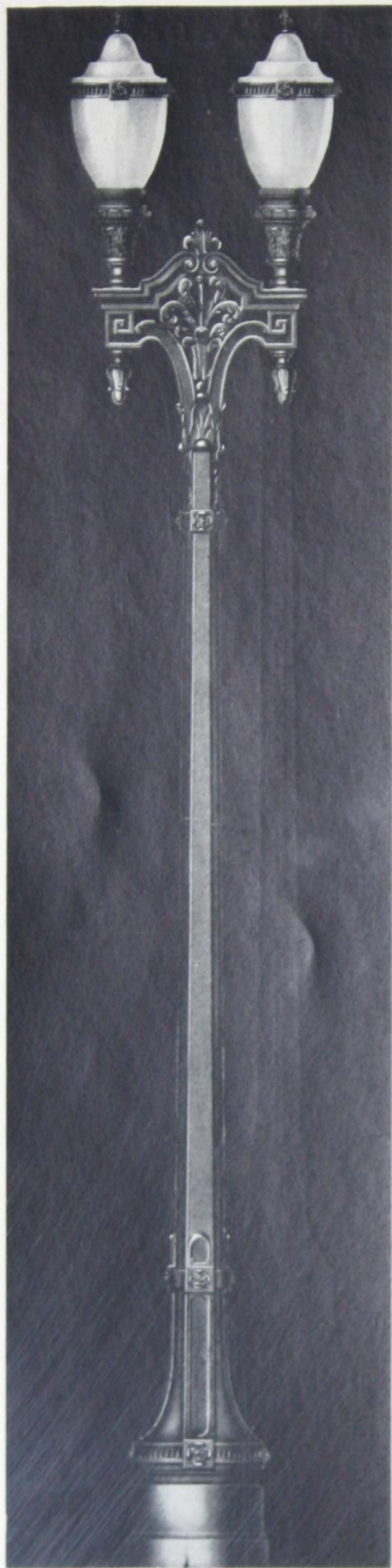


Fig. 1

Design Nos. K-64, K-65, K-137, K-0392

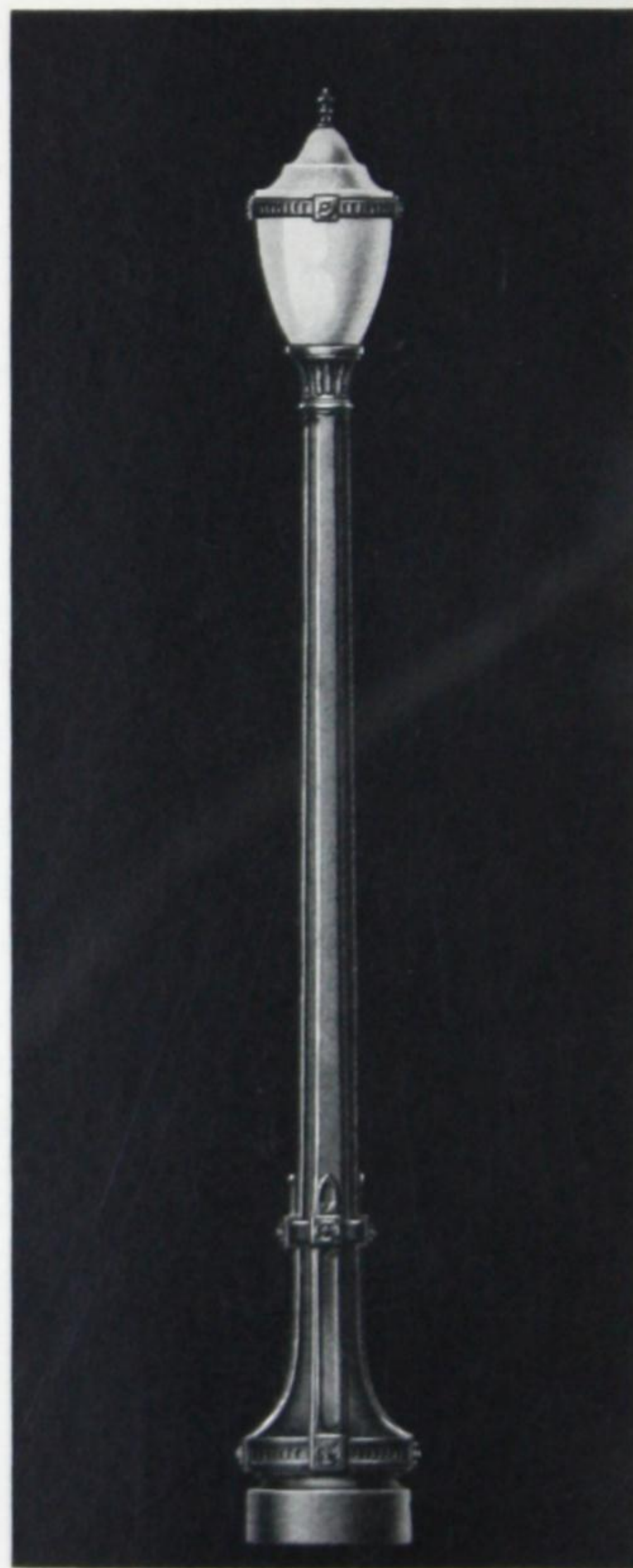


Fig. 2

Design Nos. K-61, K-62, K-63, K-122, K-132,
K-164, K-1675

KING FERRONITE CAST-IRON LIGHTING STANDARDS

FRENCH DESIGN



Fig. 3
Form 8 G-E luminaire
with K casing, No. 109-1109
glassware



Fig. 4
Form 12 G-E luminaire
with N casing, No. 118-1118
glassware



Fig. 5
Form 13 G-E luminaire
with 12K casing, No.
127-1127 glassware



Fig. 6
Form 16 G-E luminaire
with Q casing, No. 118-1118
glassware



Fig. 7
Form 18B G-E luminaire
with RW casing

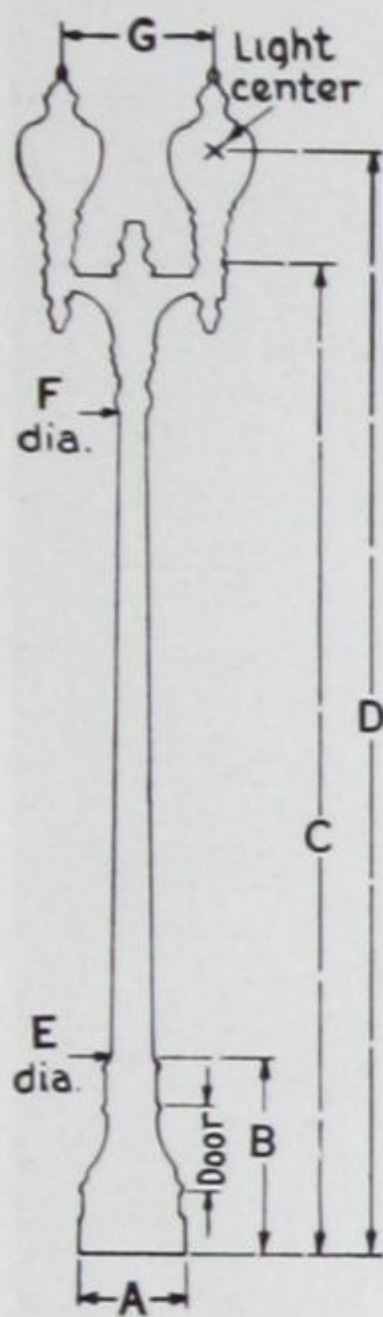


Fig. 8

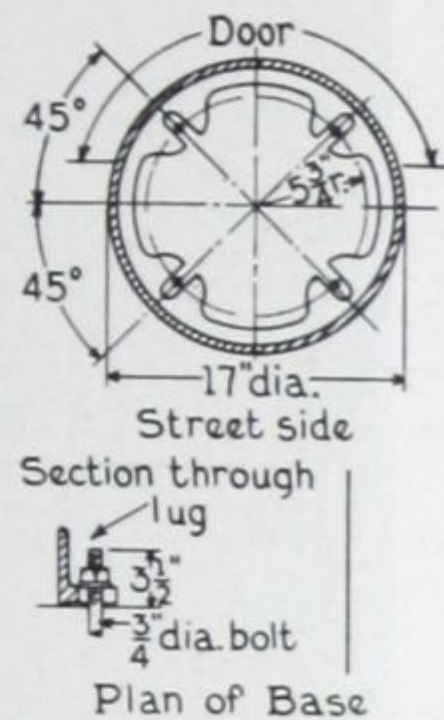


Fig. 9
Designs K-61, K-63,
K-164, K-1575

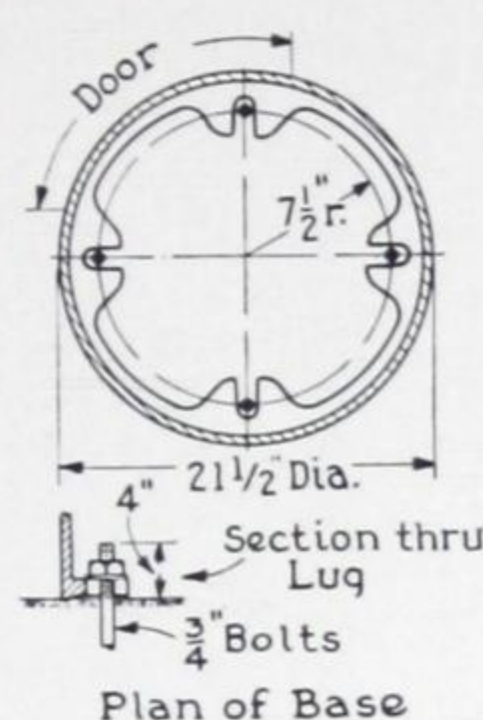


Fig. 10
Designs K-62, K-65, K-122,
K-132, K-137

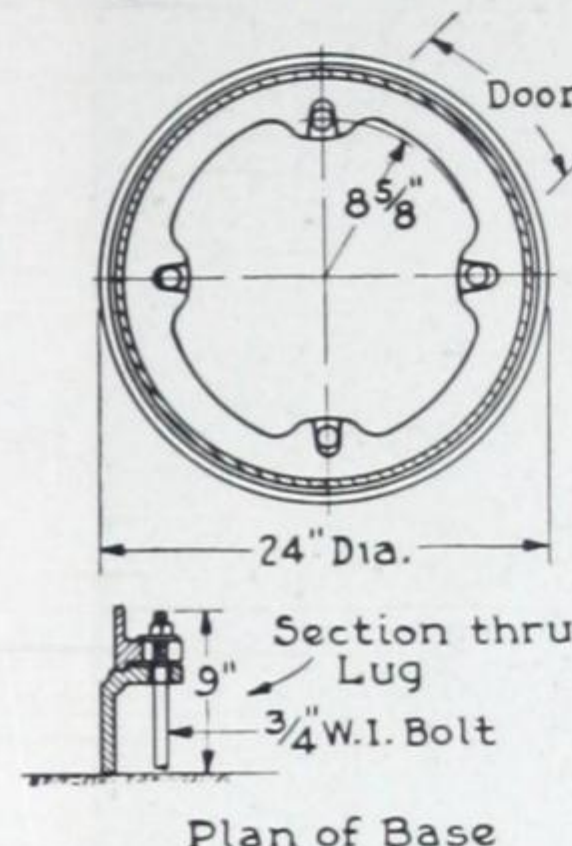


Fig. 11
Designs K-64, K-0392

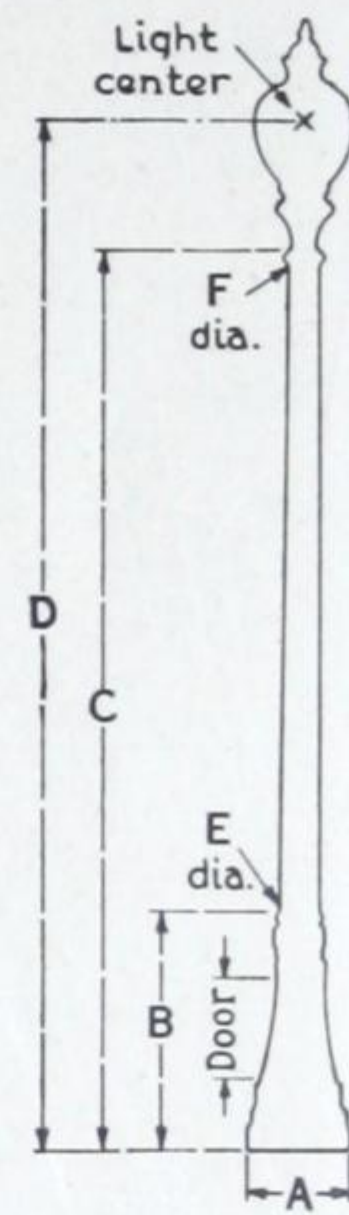


Fig. 12

FORM NO. OF G-E LUMINAIRES AND CASINGS RECOMMENDED

With King Company Design No.					
K-63, K-61, K-164, K-1575		K-62, K-132, K-122		K-64, K-65, K-137, K-0392	
FORM	CASING	FORM	CASING	FORM	CASING
8	K	12	M, N, O	12	M, N, O
13	JK, 12K	16	Q	16	Q
18A	SK	18B	RW	18B	RW
		38	RW	38	RW

KING COMPANY DESIGN NO.	A	B	C	* D							E	F	G	DOOR DIMEN	† Largest Type II Trans to Pass through Door Opening	APPROX SHIP. WT of Pole	° LIST PRICE of Pole Class GO-51
				FORM NO. G-E LUMINAIRE													
				8	12	13	16	18A	18B	38							
	In.	In.	Ft-In.	Ft-In.	Ft-In.	Ft-In.	Ft-In.	Ft-In.	Ft-In.	Ft-In.	In.	In.	In.	In.			
ΔK-65	21 1/2	50	15-11		17-8		17-8			16-7	8 1/4	6 5/8	27	6 1/2 by 13 1/2 by 12 1/2	None	914	\$257.00
ΔK-137	21 1/2	50	16-10		18-9		18-9		17-5	17-8	8 1/4	6 1/2	27			1108	
ΔK-64	24	56	17-10		20-1		20-1			20-0	8 1/4	6 3/8	27			954	260.00
ΔK-0392	24	56	19-1		21-0		21-0		20-8	20-11	8 1/4	6 1/8	27			1143	263.00
K-63	17	39	10-4	11-6		11-10		11-8			6 7/16	4 5/8		5 1/2 by 14 by 12	25,000 lumen	404	84.00
K-61			11-8	12-10		13-2		13-0			6 7/16	4 1/4				424	89.00
K-164			12-8	13-10		14-2		14-0			6 7/16	4 1/4				439	93.00
K-1575			14-1	15-3		15-7		15-5			6 7/16	4 1/4				435	95.00
K-62	21 1/2	50	13-2		15-1		15-1		14-9	15-0	8 1/4	5		6 1/2 by 13 1/2 by 12 1/2	25,000 lumen	660	132.00
K-132			14-2		16-1		16-1		15-9	16-0	8 1/4	4 5/8				679	135.00
K-122			15-0		16-11		16-11		16-7	16-10	8 1/4	4 3/8				701	138.00

* Light-center dimensions are given for luminaires illustrated above and will vary slightly for other types of glassware.

† Maximum sizes placed and accessible through door openings. In some bases larger sizes can be accommodated by special methods. Information available on request.

Δ Two-light standards recommended with 3-in. reinforcing pipe embedded 4 ft. in foundation. Pipe 17 ft 9 in. long for K-65; 18 ft 10 in. long for K-137; 20 ft 3 in. long for K-64, and 21 ft 2 in. long K-0392. With a safety spider, a 25,000-lumen transformer can be used in two-light designs.

° Anchor bolts reinforcing pipe or safety spider, where required, not included in price of standard.

3/4- by 18-in. anchor bolts recommended.

Design numbers and prices do not include luminaires, transformers, or MAZDA lamps.

When ordering standards, mention form number of G-E luminaires and casing to be used.

Dimensions are for reference only. For exact dimensions refer nearest Sales Office.

KING FERRONITE CAST-IRON LIGHTING STANDARDS

Flemish
Design

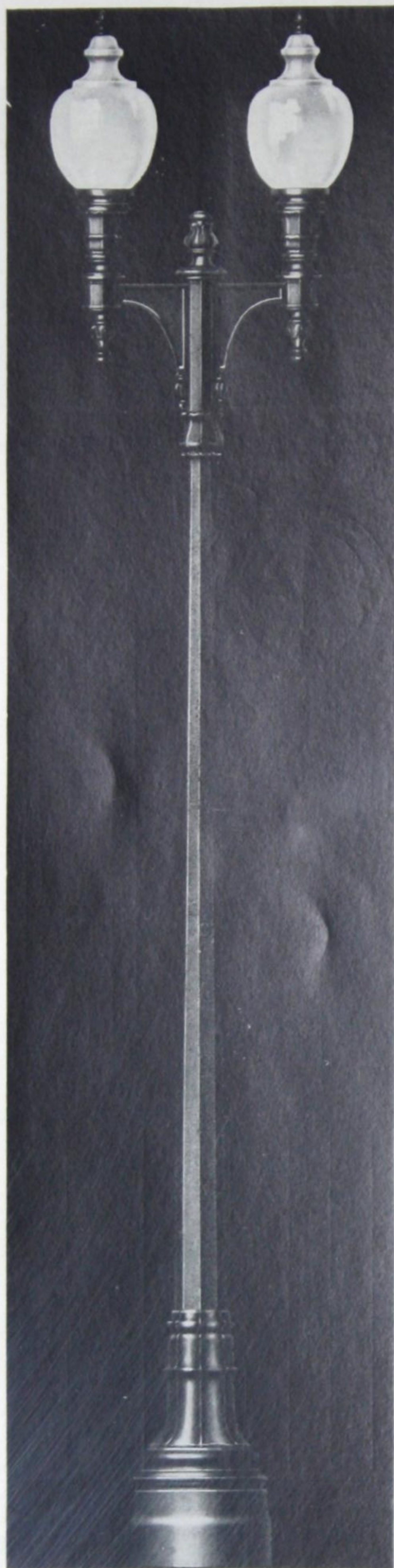


Fig. 1
Design Nos. K-46, K-1840, K-1841

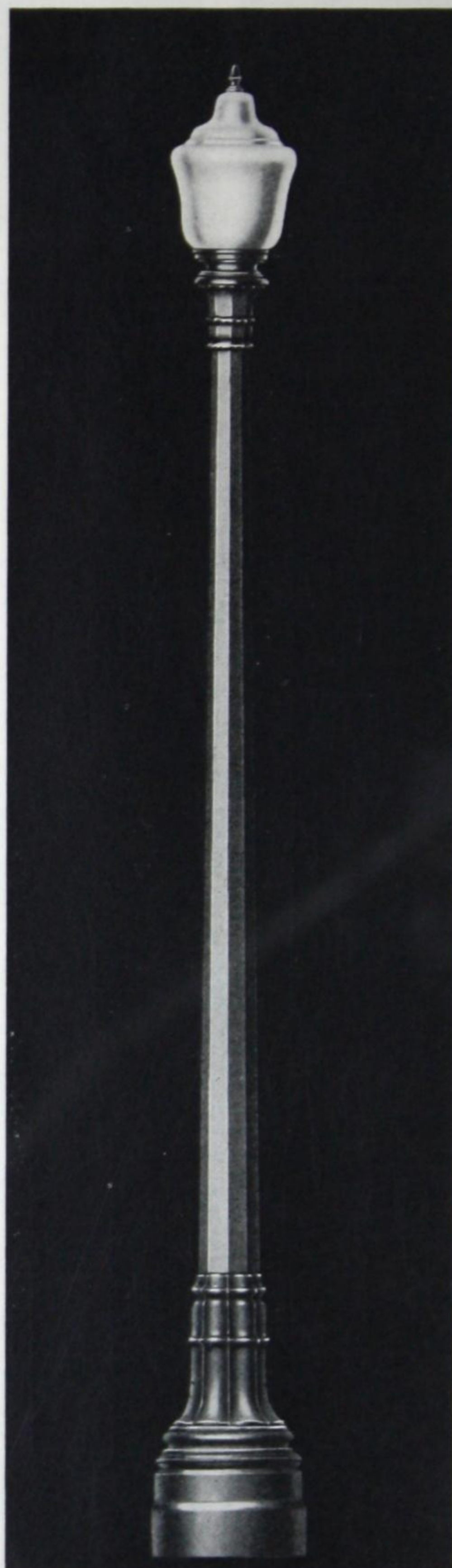


Fig. 2
Design Nos. K-44, K-45, K-106, K-107,
K-142, K-149, K-1515

KING FERRONITE CAST-IRON LIGHTING STANDARDS

FLEMISH DESIGN



Fig. 3
Form 12 G-E luminaire
with N casing, No. 118-1118
glassware



Fig. 4
Form 13 G-E luminaire
with 12K casing, No.
127-1127 glassware



Fig. 5
Form 16 G-E luminaire
with Q casing, No. 118-1118
glassware



Fig. 6
Form 18B G-E luminaire
with RW casing



Fig. 7
Form 38 G-E luminaire
with RW casing

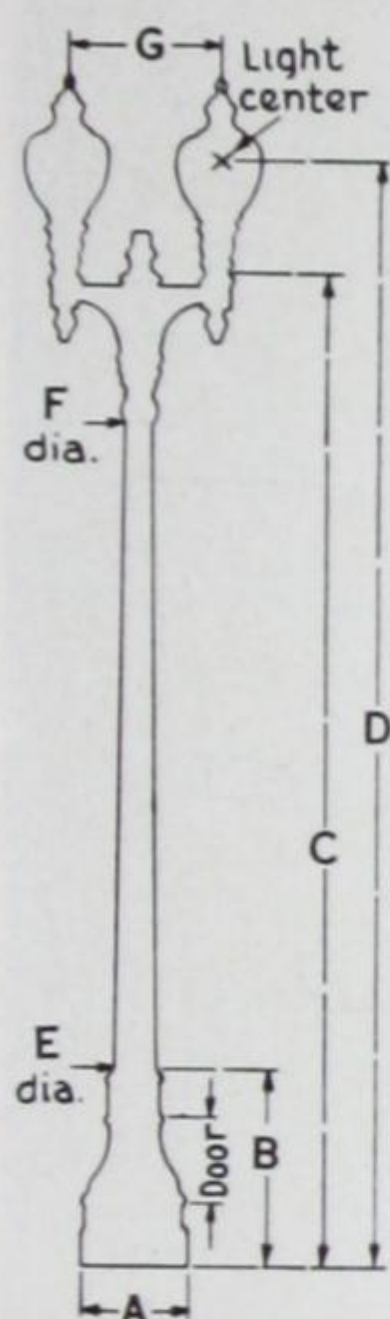


Fig. 8

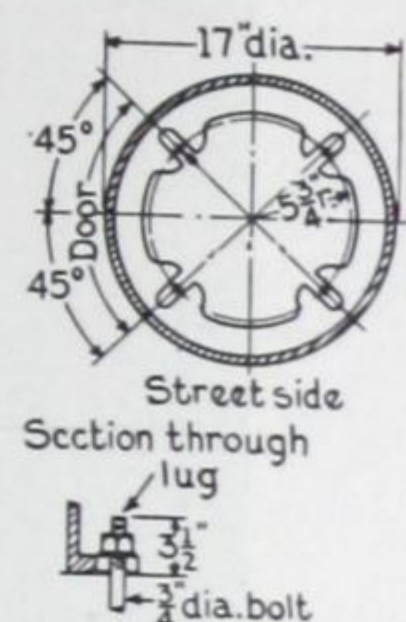


Fig. 9
Designs K-44, K-106,
K-107, K-142

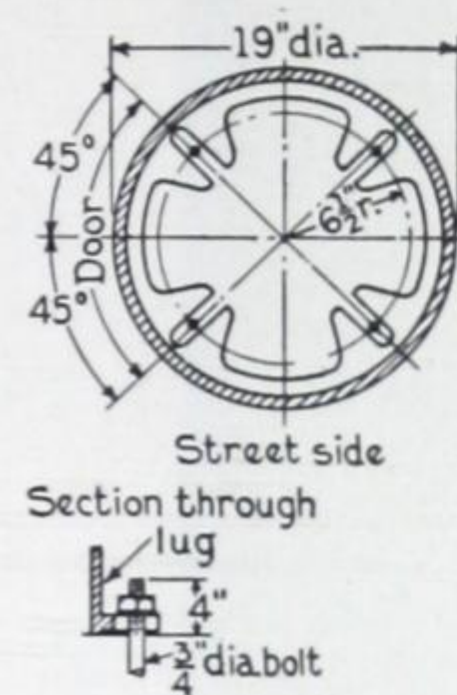


Fig. 10
Designs K-45, K-46, K-149,
K-1515, K-1840, K-1841

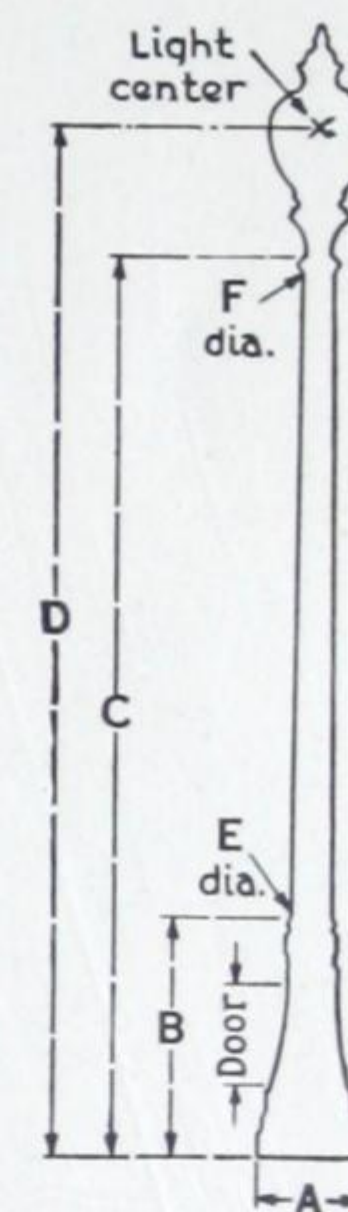


Fig. 11

FORM NO. OF G-E LUMINAIRES AND CASINGS RECOMMENDED

With King Company Design No.					
K-44, K-106, K-107, K-142		K-45, K-1515, K-149		K-46, K-1840, K-1841	
FORM	CASING	FORM	CASING	FORM	CASING
13	12K, JK	12	M, N, O	12	M, N, O
18A	SK	16	O	16	O
		18B	RW	18B	RW
		38	RW	38	RW

KING COMPANY DESIGN NO.	A	B	C	* D						E	F	G	DOOR DIMEN	†Largest Type IL Trans to Pass through Door Opening	APPROX. SHIP. WT of Pole	° LIST PRICE of Pole Class GO-51
				FORM NO. G-E LUMINAIRE												
				12	13	16	18A	18B	38							
	In.	In.	Ft-In.	Ft-In.	Ft-In.	Ft-In.	Ft-In.	Ft-In.	Ft-In.	In.	In.	In.	In.			
K-46 K-1840 K-1841	19	35 1/8	15-4	17-3		17-3		16-11	17-2	7	5 3/8	27	6 by 11 by 17	None	613	\$163.00
16-4			18-3		18-3		17-11	18-2	7	5 1/4	27	633			163.00	
17-4			19-3		19-3		18-11	19-2	7	5	27	648			168.00	
K-44 K-106 K-107 K-142	17	31 1/2	9-10		11-6		11-2			5 15/16	4 3/8		5 1/8 by 10 1/2 by 14	25,000 lumen	323	72.00
10-8			12-4		12-0		5 15/16	4 1/8		5 15/16	3 15/16				331	74.00
11-8			13-4		13-0		5 15/16	3 15/16		5 15/16	3 13/16				341	77.00
12-8			14-4		14-0									358	79.00	
K-45 K-1515 K-149	19	35 1/8	13-0	14-11		14-11		14-7	14-10	7	5 3/8		6 by 11 by 17	25,000 lumen	465	96.00
14-0			15-11		15-11		15-7	15-10	7	5 1/4		485			99.00	
14-10			16-9		16-9		16-5	16-8	7	5		500			101.00	

* Light-center dimensions are given for luminaires illustrated above and will vary slightly for other types of glassware.

° Anchor bolts not included with standard.

† Maximum sizes placed and accessible through door openings. In some bases larger sizes can be accommodated by special methods. Information on request.

3/4" X 18-in. anchor bolts recommended.

Design numbers and prices do not include luminaires, transformers, or MAZDA lamps.

When ordering standards, mention form number of G-E luminaires and casing to be used.

Dimensions are for reference only. For exact dimensions refer nearest Sales Office.

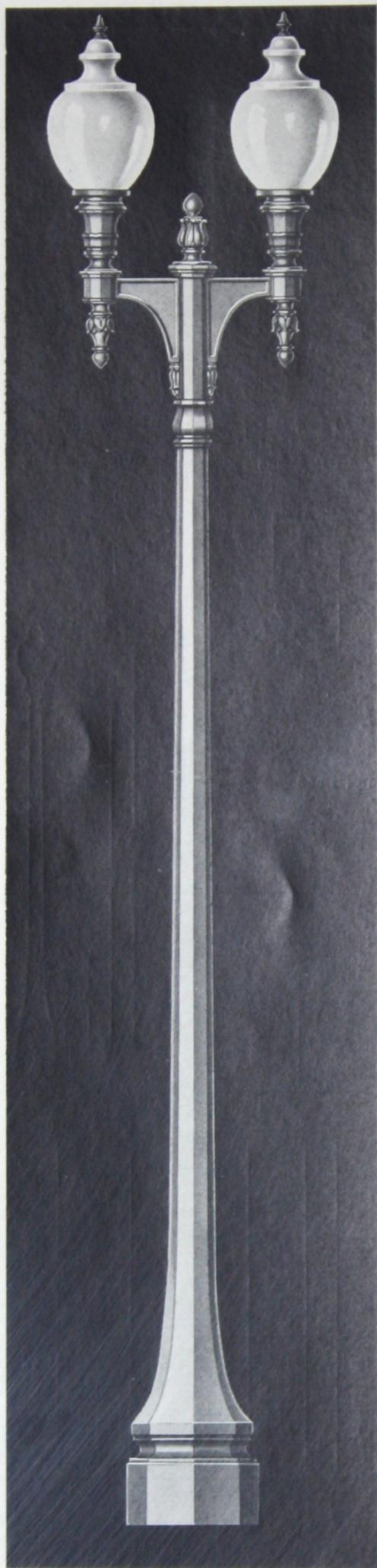


Fig. 1
Design Nos. K-129, K-1842

Community Design

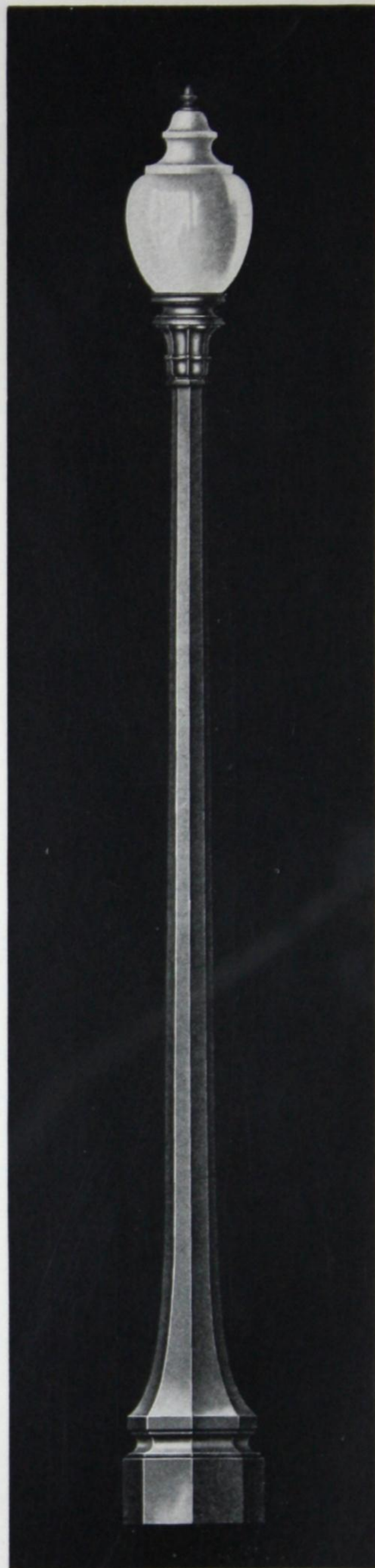
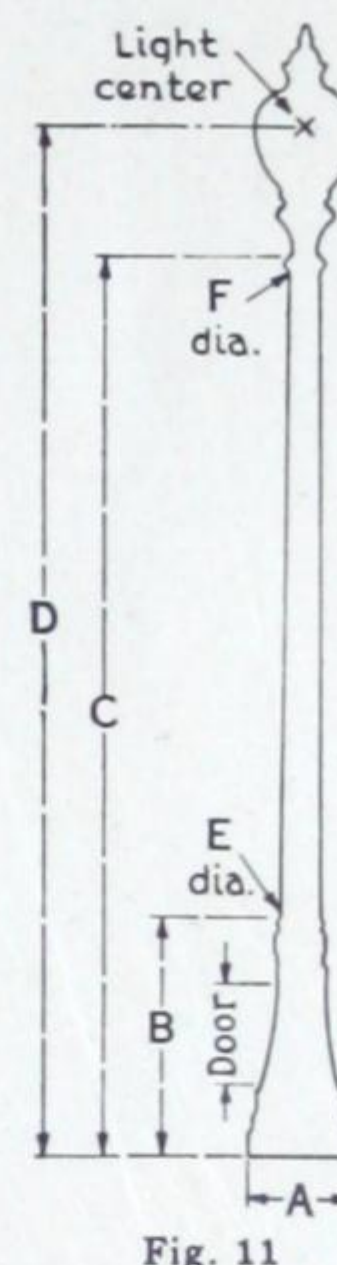
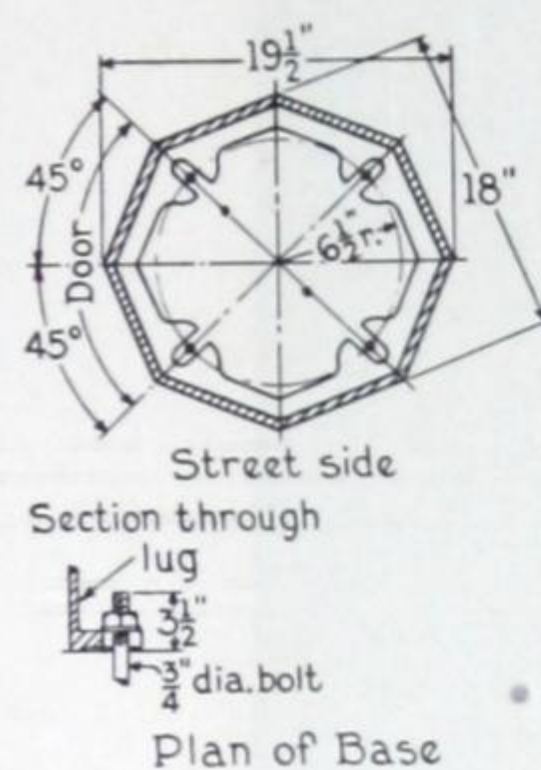
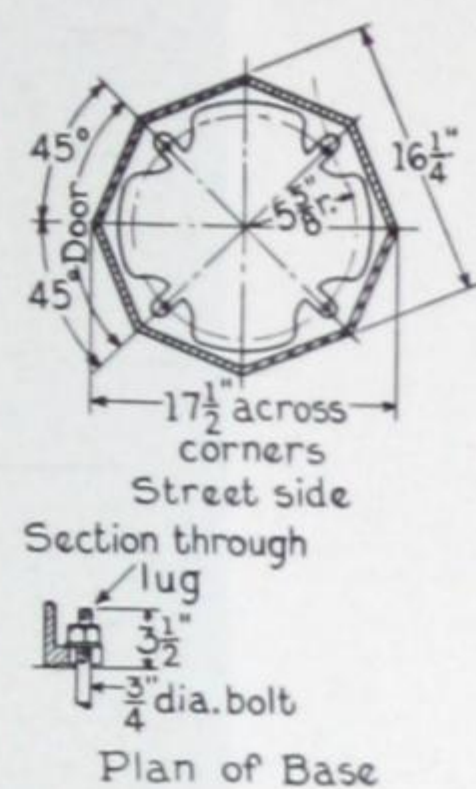
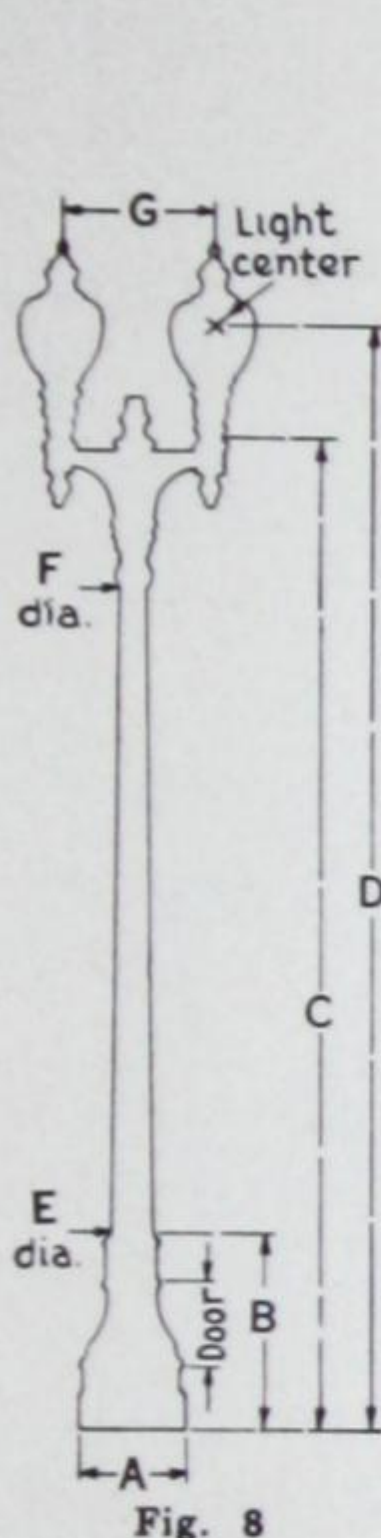


Fig. 2
Design Nos. K-16, K-17, K-77, K-79, K-1559

KING FERRONITE CAST-IRON LIGHTING STANDARDS
COMMUNITY DESIGN



FORM NO. OF G-E LUMINAIRES AND CASINGS RECOMMENDED					
With King Company Design No.					
K-77, K-79		K-16, K-17, K-1559		K-129, K-1842	
FORM	CASING	FORM	CASING	FORM	CASING
13 18A	JK, 12K SK	12 16 18B 38	M, N, O Q RW RW	12 16 18B 38	M, N, O Q RW RW

KING COMPANY DESIGN NO.	A	B	C	* D						E	F	G	DOOR DIMEN	† Largest Type IL Trans to Pass through Door Opening	APPROX SHIP. WT of Pole	° LIST PRICE of Pole Class GO-51			
				FORM NO. G-E LUMINAIRE															
				12	13	16	18A	18B	38										
	In.	In.	Ft-In.	Ft-In.	Ft-In.	Ft-In.	Ft-In.	Ft-In.	Ft-In.	In.	In.	In.	In.						
K-129 K-1842	Oct. 18 by 19½	{	15-1 16-8	17-0 18-7		17-0 18-7		16-8 18-3	16-11 18-3		4 7⁄8 4 ½	27 27	12 ½ by 18 by 18	None	593 615	\$153.00 157.00			
K-16 K-17 K-1559			11-3 12-10 14-4	13-2 14-9 16-3		13-2 14-9 16-3		12-10 14-5 15-11	13-1 14-8 16-2	5 ¼ 4 7⁄8 4 ½					417 445 467	81.00 87.00 99.00			
K-77 K-79			16 ½ by 17 ½	{	10-8 11-6		12-4 13-2		12-0 12-10			4 3 13⁄16				5 ½ by 11 by 14 ½	25,000 lumen	296 311	70.00 77.00

* Light-center dimensions are given for luminaires illustrated above, and will vary slightly for other types of glassware.

* Anchor bolts are not included with standard.

$\frac{3}{4}$ - by 18-in. anchor bolts recommended.

† Maximum sizes placed and accessible through door openings. In some bases larger sizes can be accommodated by special methods. Information available on request.

Design numbers and prices do not include luminaires, transformers, or MAZDA lamps.

Design numbers and prices do not include luminaires, transformers, or Mazda lamps.
When ordering standards, mention form number of G-E luminaires and casing to be used.

When ordering standards, mention form number or G-E luminaire and casing to
Dimensions are for reference only. For exact dimensions refer nearest Sales Office.

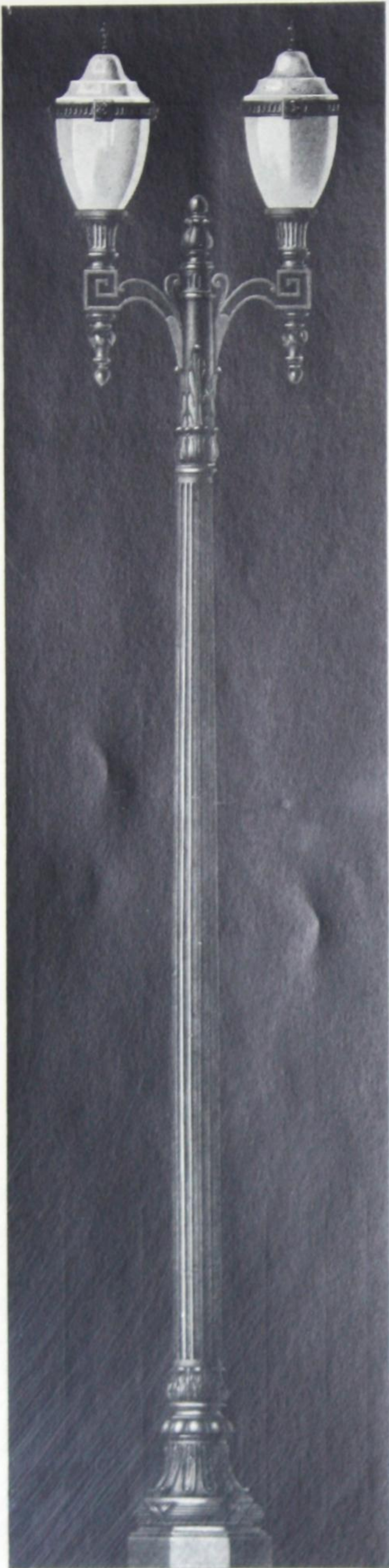


Fig. 1
Design No. K-87

Georgian
Design

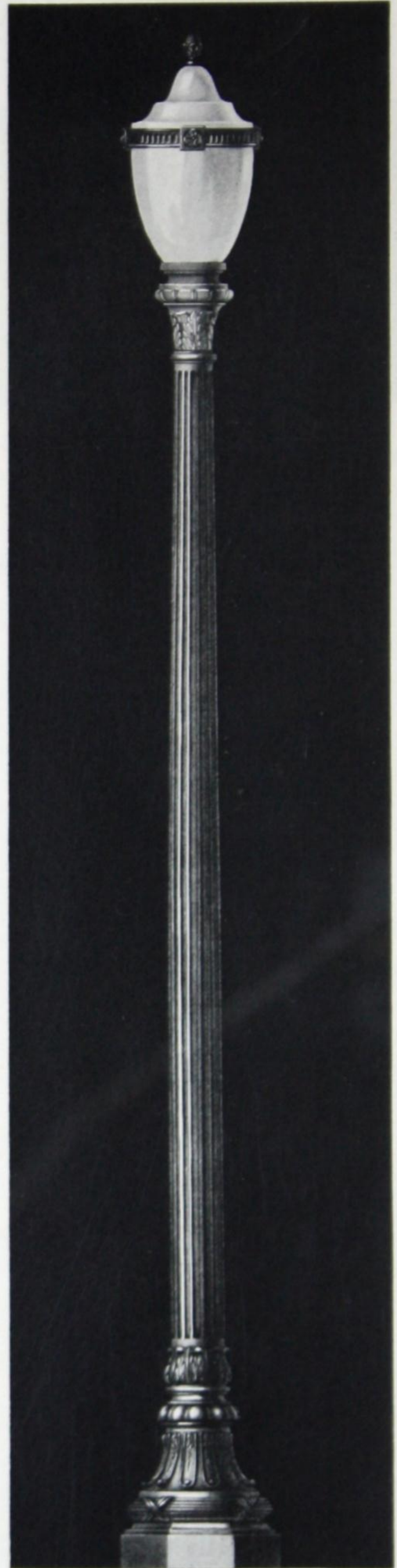


Fig. 2
Design Nos. K-85, K-86

KING FERRONITE CAST-IRON LIGHTING STANDARDS

GEORGIAN DESIGN



Fig. 3
Form 8 G-E luminaire
with F casing, No. 127-1127
glassware



Fig. 4
Form 12 G-E luminaire
with N casing, No. 118-1118
glassware



Fig. 5
Form 16 G-E luminaire
with Q casing, No. 118-1118
glassware



Fig. 6
Form 18B G-E luminaire
with RW casing



Fig. 7
Form 38 G-E luminaire
with RW casing

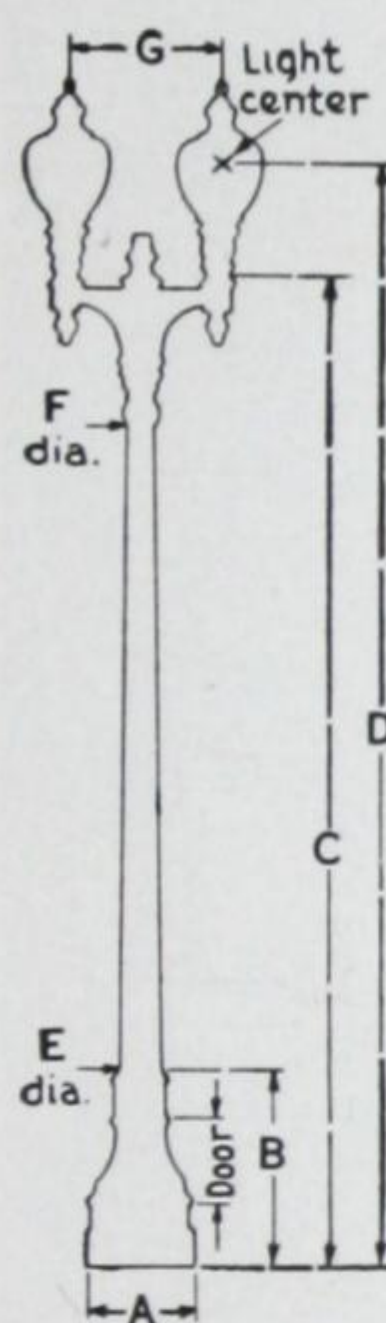


Fig. 8

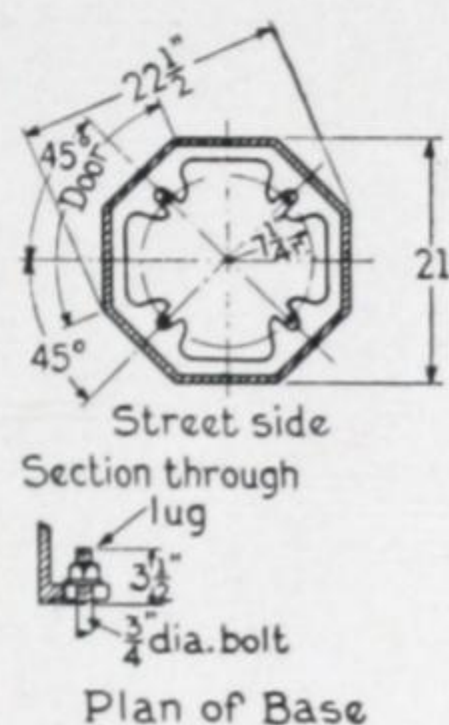


Fig. 9
Designs K-85, K-86,
K-87

FORM NO. OF G-E LUMINAIRES AND CASINGS RECOMMENDED

With King Company Design No.			
K-85, K-86		K-87	
FORM	CASING	FORM	CASING
12	M, N, O	8	F
16	Q	12	M, N, O
18B	RW	18A	S
38	RW	18B	RW

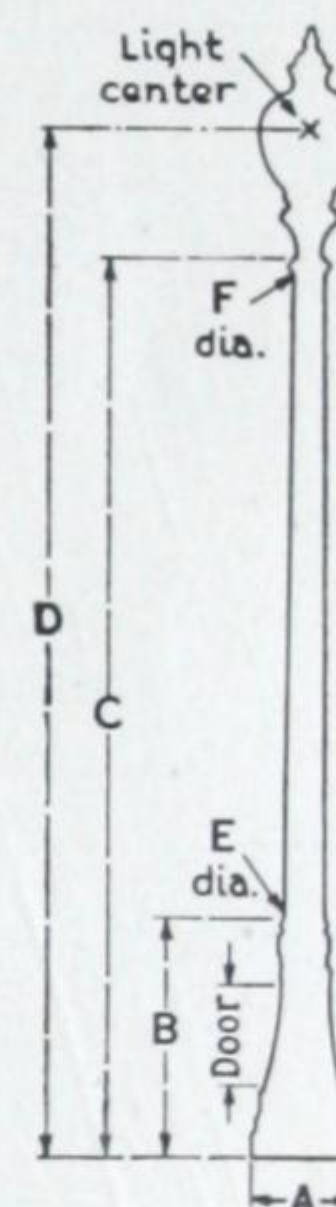


Fig. 10

KING COMPANY DESIGN NO.	A	B	C	* D						E	F	G	DOOR DIMEN	† Largest Type IL Trans to Pass through Door Opening	APPROX SHIP. WT of Pole	° LIST PRICE of Pole Class GO-51
				FORM NO. G-E LUMINAIRE												
				8	12	16	18A	18B	38							
	In.	In.	Ft-In.	Ft-In.	Ft-In.	Ft-In.	Ft-In.	Ft-In.	In.	In.	In.	In.				
K-87 } K-85 } K-86 }	Oct. 21 by 22 1/2	31 {	16-1 10-9 13-3	17-6	18-0 12-8 15-2	12-8 15-2	17-5	17-8 12-4 14-10	12-5 14-11	7 7 7	5 1/16 5 1/16 5 1/16	28	5 1/4 by 11 by 8 3/4	None None None	778 505 570	\$172.00 96.00 105.00

* Light-center dimensions are given for luminaires illustrated above, and will vary slightly for other types of glassware.

† Maximum sizes placed and accessible through door openings. In some bases larger sizes can be accommodated by special methods. Information available on request.

° Anchor bolts not included with standard.

3/4- by 18-in. anchor bolts recommended.

Design numbers and prices do not include luminaires, transformers, or MAZDA lamps.

When ordering standards, mention form number of G-E luminaires and casing to be used.

Dimensions are for reference only. For exact dimensions refer nearest Sales Office.

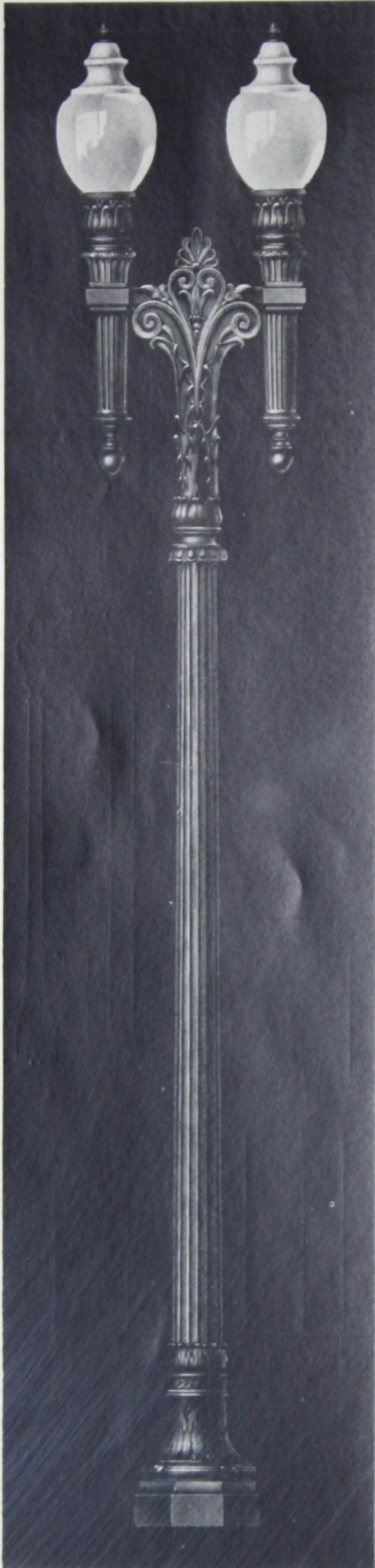


Fig. 1
Design No. K-70

Doric Design

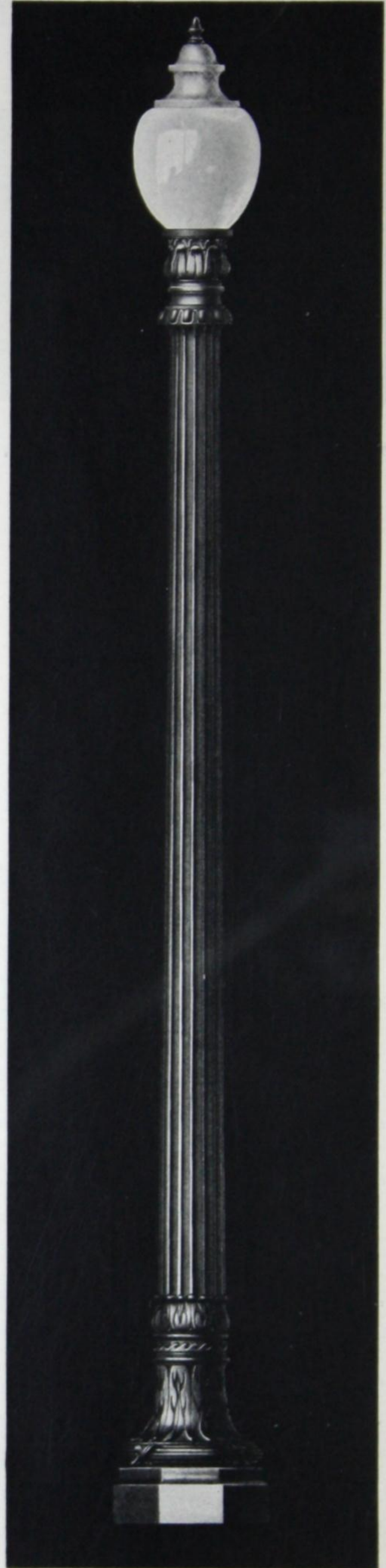


Fig. 2
Design Nos. K-73, K-145, K-168, K-1666

KING FERRONITE CAST-IRON LIGHTING STANDARDS

DORIC DESIGN



Fig. 3

Form 8 G-E luminaire with K casing, No. 109-1109 glassware



Fig. 4

Form 9 G-E luminaire with E casing, No. 118-1118 glassware



Fig. 5

Form 12 G-E luminaire with N casing, No. 118-1118 glassware



Fig. 6

Form 18A G-E luminaire with SK casing



Fig. 7

Form 38 G-E luminaire with RW casing

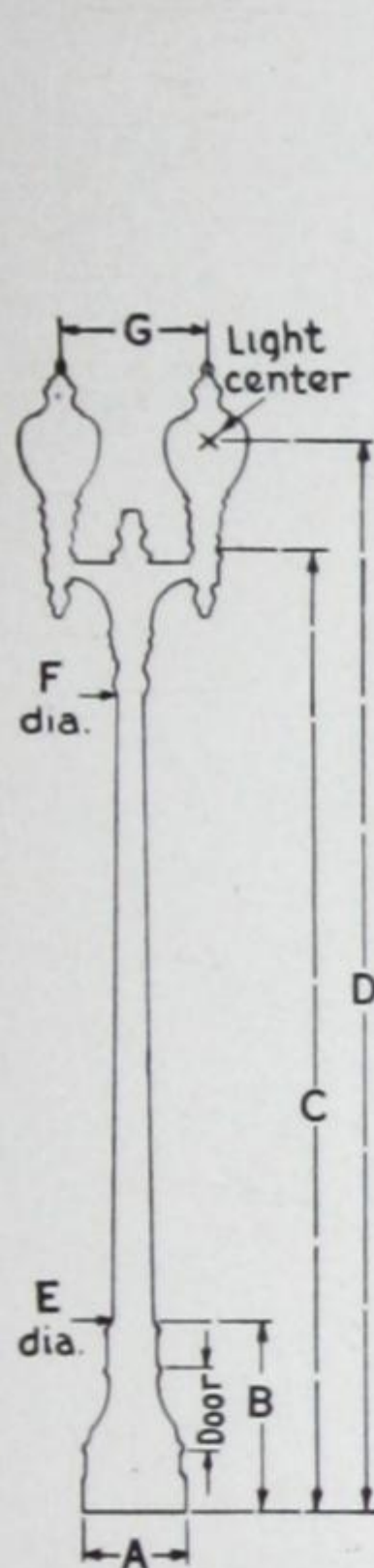


Fig. 8

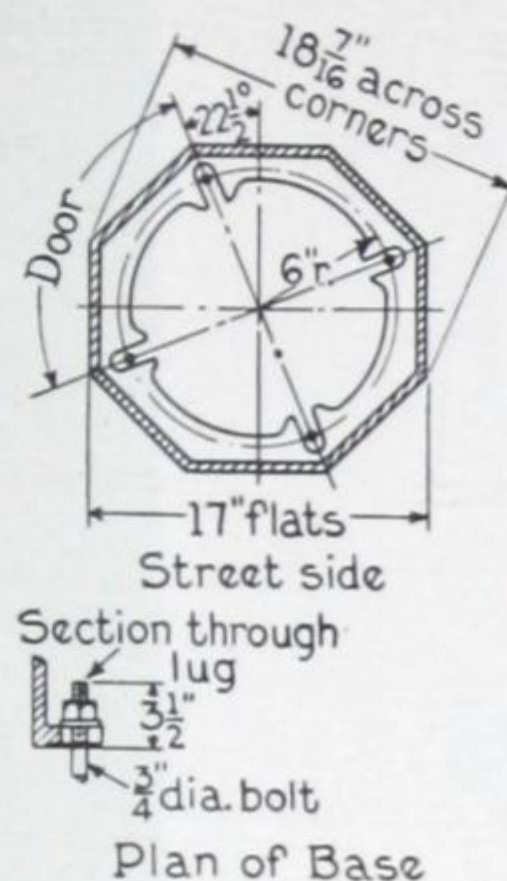


Fig. 9

Designs K-145, K-1666

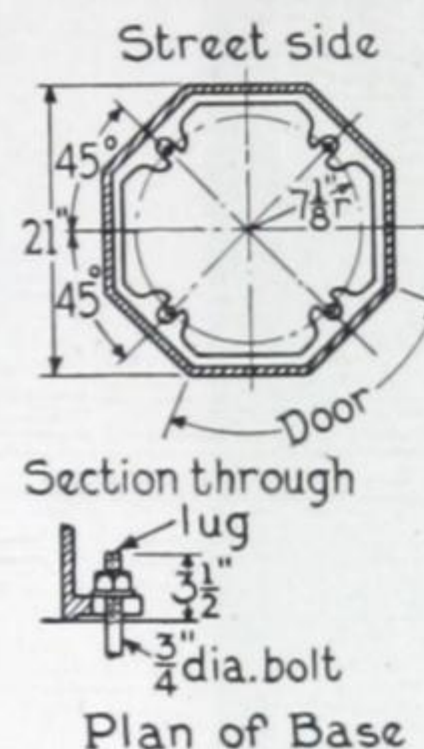


Fig. 10

Designs K-70, K-73, K-168

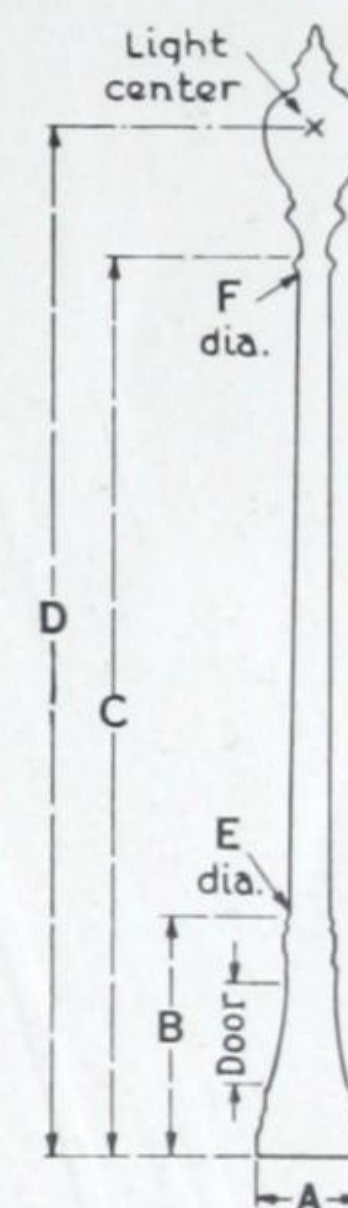


Fig. 11

FORM NO. OF G-E LUMINAIRES AND CASINGS RECOMMENDED

With King Company Design No.							
K-145, K-1666		K-73		K-168		K-70	
FORM	CASING	FORM	CASING	FORM	CASING	FORM	CASING
8	K	9	E	12	M, N, O	9	E
13	JK			18B	RW	12	M, N, O
18A	SK					18B	RW
						38	RW

KING COMPANY DESIGN NO.	A	B	C	* D							E	F	G	DOOR DIMEN	† Largest Type IL Trans to Pass through Door Opening	APPROX. SHIP. WT of Pole	° LIST PRICE of Pole Class GO-51
				FORM NO. G-E LUMINAIRE													
	In.	In.	Ft-In.	Ft-In.	8	9	12	13	18A	18B	38	In.	In.	In.	In.		
†K-70 K-73 K-168	Oct. 21 by 22 3/4	30	17-10 13-10 13-11		19-6 15-6	19-9 15-10			19-5 15-6	19-8	9 9 9	6 5/8 6 5/8 6 5/8	29	5 3/4 by 12 by 14	None	1010 635 638	\$246.00 120.00 120.00
K-145 K-1666	Oct. 17 by 18 1/2	35	11-7 13-1	12-9 14-3			13-3 14-9	12-11 14-5			5 1/2 5 1/2	4 3/16 4		4 by 9 by 15	10,000 lumen	376 395	87.00 91.00

* Light-center dimensions are given for luminaires illustrated above, and will vary slightly for other types of glassware.

† Maximum sizes placed and accessible through door openings. In some bases larger sizes can be accommodated by special methods. Information available on request.

‡ K-70 recommended with 3 1/2-in. reinforcing pipe 19 ft 9 in. long embedded 4 ft in concrete foundation. With safety spider a 25,000-lumen transformer can be used.

° Anchor bolts, reinforcing pipe or safety spider not included in price of standard.

3/4- by 18-in. anchor bolts recommended.

Design numbers and prices do not include luminaires, transformers, or MAZDA lamps.

When ordering standards, mention form number of G-E luminaires and casing to be used.

Dimensions are for reference only. For exact dimensions refer nearest Sales Office.

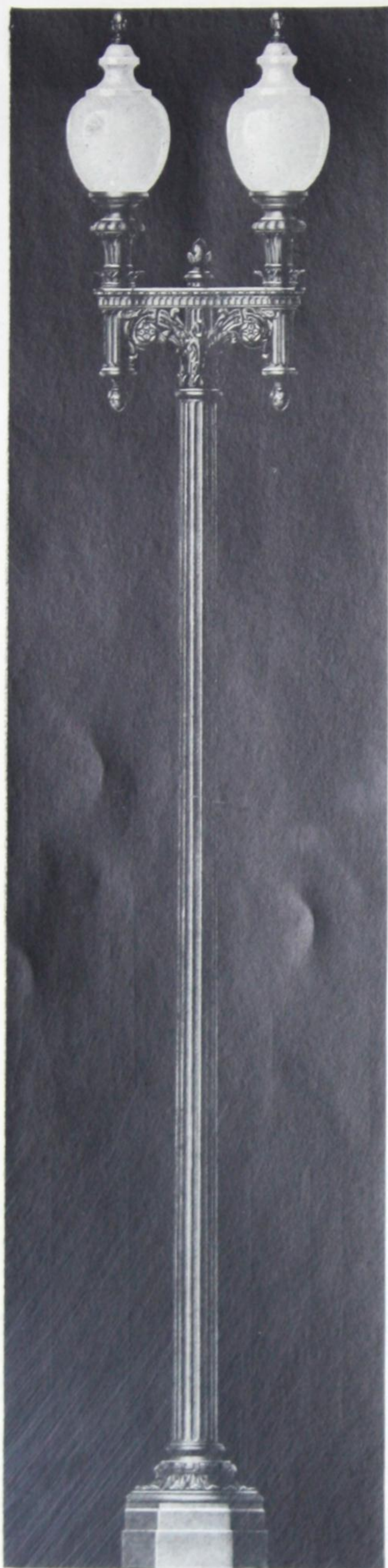


Fig. 1
Design No. K-101

Washington Design

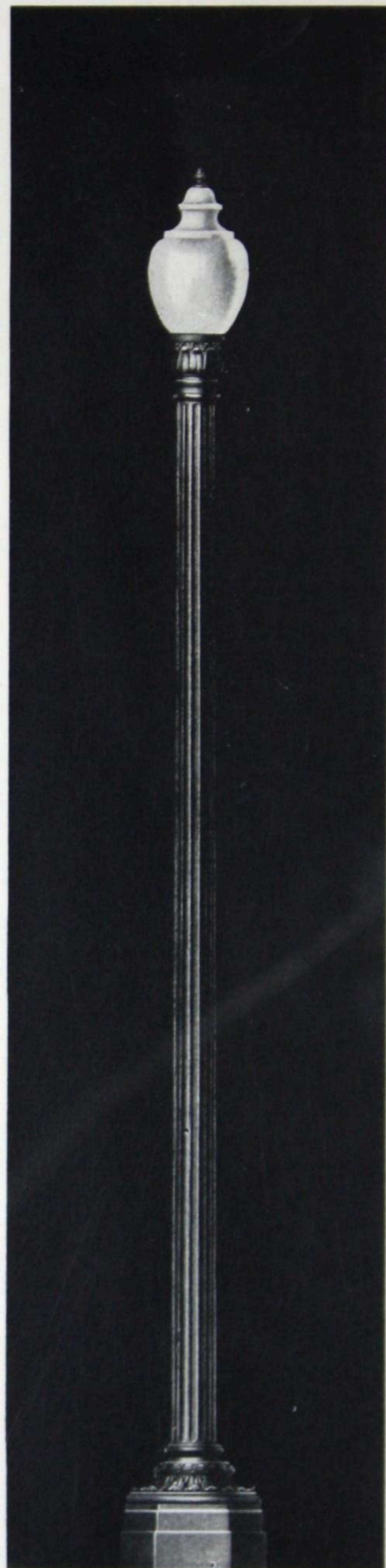


Fig. 2
Design No. K-103

KING FERRONITE CAST-IRON LIGHTING STANDARDS WASHINGTON DESIGN



Fig. 3
Form 9 G-E luminaire
with E casing,
No. 118-1118
glassware



Fig. 4
Form 12 G-E luminaire
with N casing,
No. 118-1118
glassware



Fig. 5
Form 27 G-E luminaire
with 21 casing,
No. 118-1118
glassware



Fig. 6
Form 18B G-E luminaire
with RK casing



Fig. 7
Form 38 G-E luminaire
with RK casing

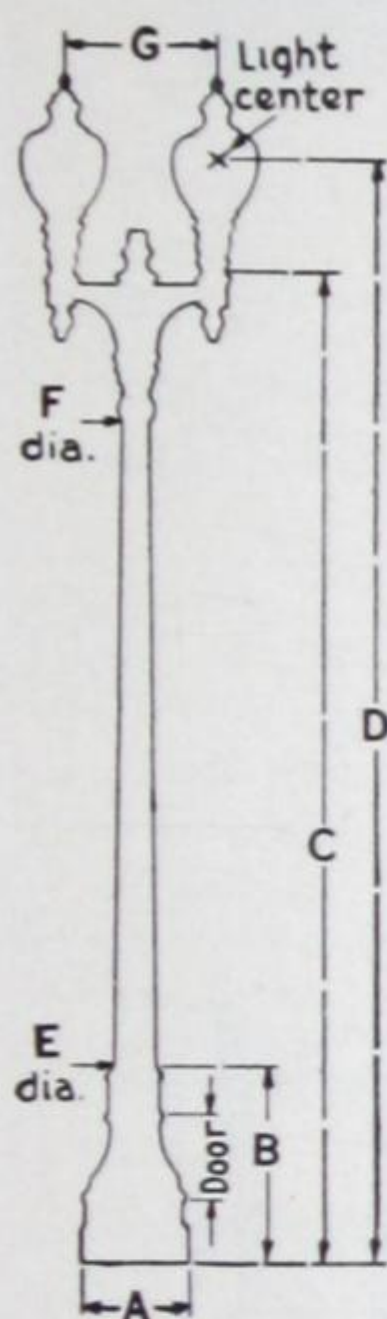


Fig. 8

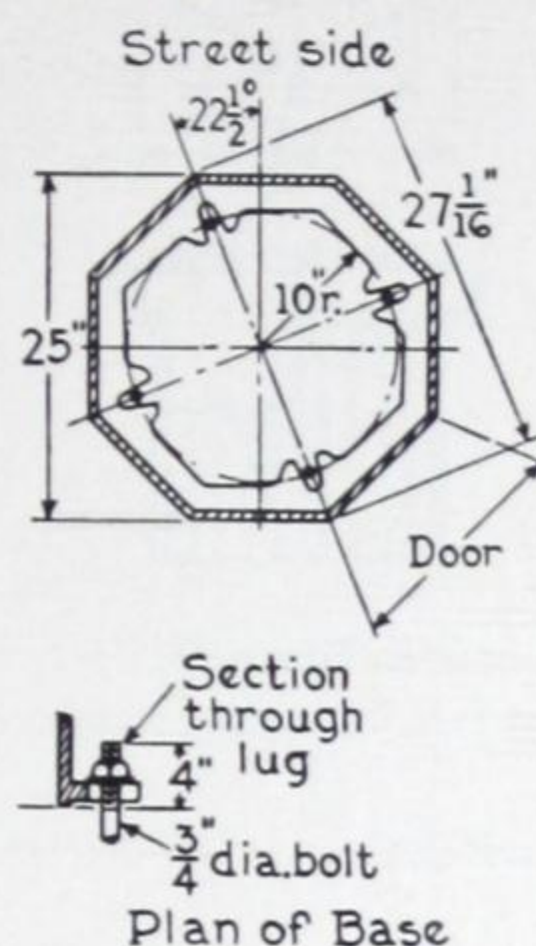


Fig. 9
† Designs K-101, K-103

FORM NO. OF G-E LUMINAIRES AND CASINGS RECOMMENDED

With King Company Design No.			
K-103		K-101	
FORM	CASING	FORM	casing
9	E	9 12 27 18B 38	E M, N, O 21 RK RK

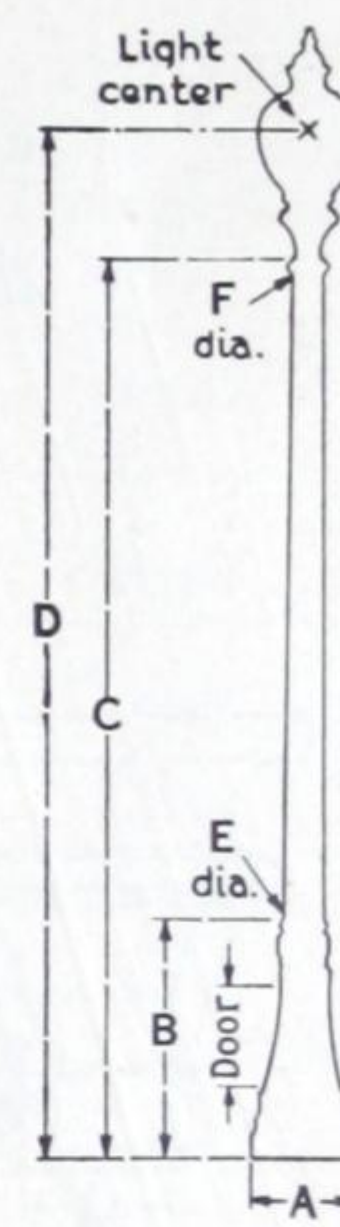


Fig. 10

KING COMPANY DESIGN NO.	A	B	C	* D					E	F	G	DOOR DIMEN	† Largest Type IL Trans to Pass through Door Opening	APPROX SHIP. WT of Pole	LIST PRICE of Pole Class GO-51
				FORM NO. G-E LUMINAIRE											
				9	12	27	18B	38							
				In.	In.	Ft-In.	Ft-In.	Ft-In.							
† K-101 K-103	Oct. 25 by 27	21	{ 18-11 17-0	20-7 18-8	20-10	21-0	20-4	20-6	7 ¾ 7 ¾	6 ½ 6 ½	28	9 ½ by 9 ½	{ None	{ 1140 855	{ \$344.00 194.00

* Light-center dimensions are given for luminaires illustrated above, and will vary slightly for other types of glassware.

† Maximum sizes placed and accessible through door openings. In some bases larger sizes can be accommodated by special methods. Information available on request.

‡ These designs recommended with 3 1/2-in. reinforcing pipe. The pipe required is 21 ft 9 in. long embedded 4 ft in concrete foundations for K-101 and 18 ft 4 in. long embedded 3 ft in foundation for K-103. No transformer can be installed through door opening even with use of safety spider.

* Anchor bolts, reinforcing pipe or safety spider not included in price of standard.

3/4- by 18-in. anchor bolts recommended.

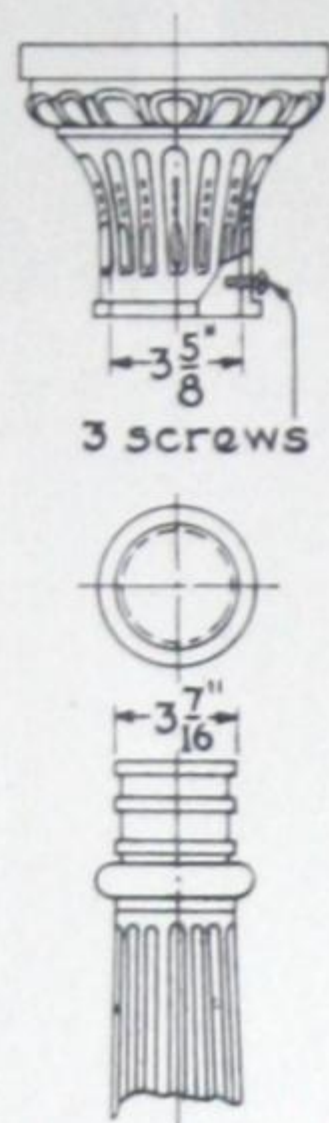
Design numbers and prices do not include luminaires, transformers, or MAZDA lamps.

When ordering standards, mention form number of G-E luminaires and casing to be used.

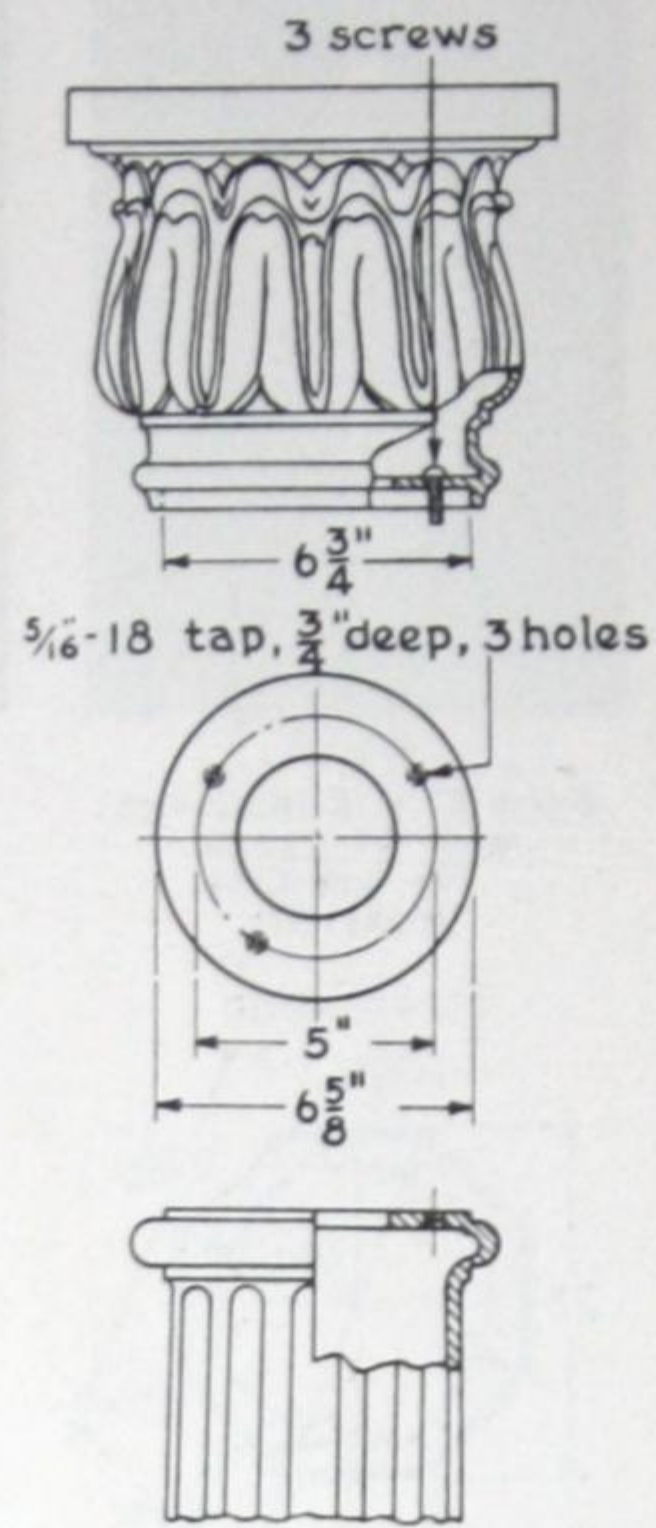
Dimensions are for reference only. For exact dimensions refer nearest Sales Office.

KING FERRONITE CAST-IRON LIGHTING STANDARDS

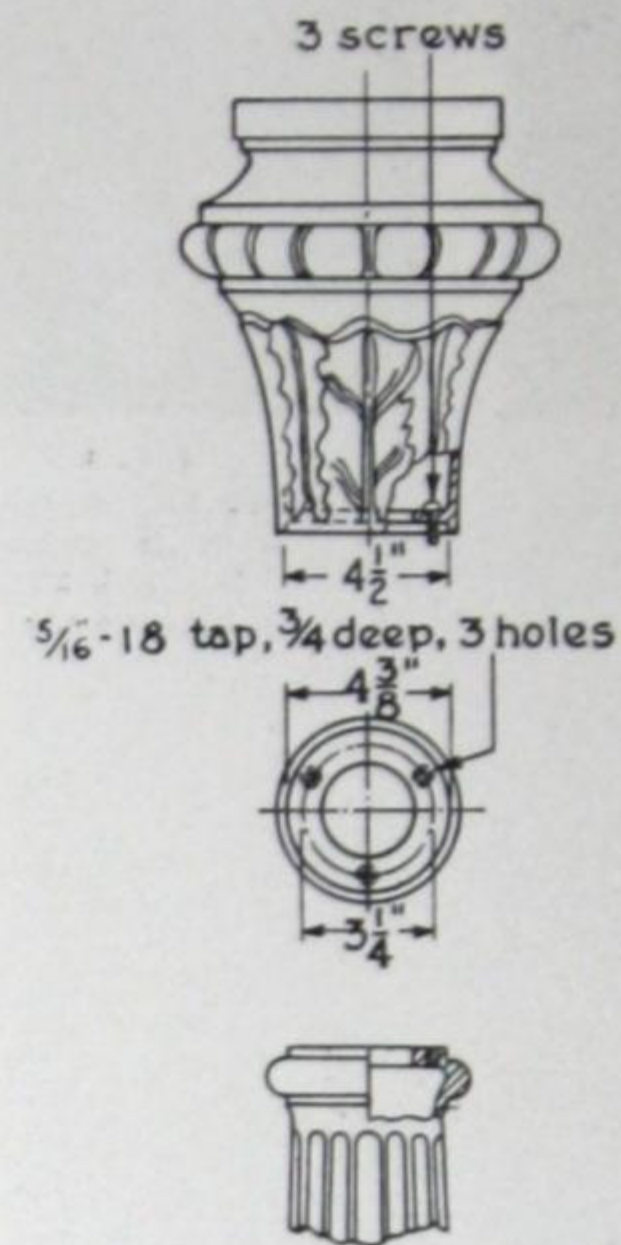
CASINGS AND POLE TOPS



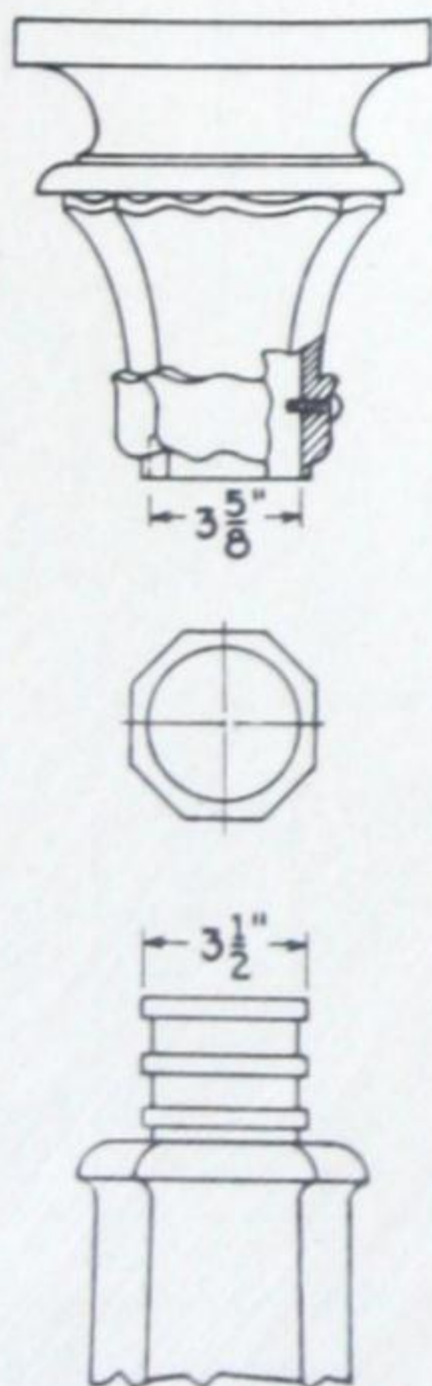
G-E. Form-8



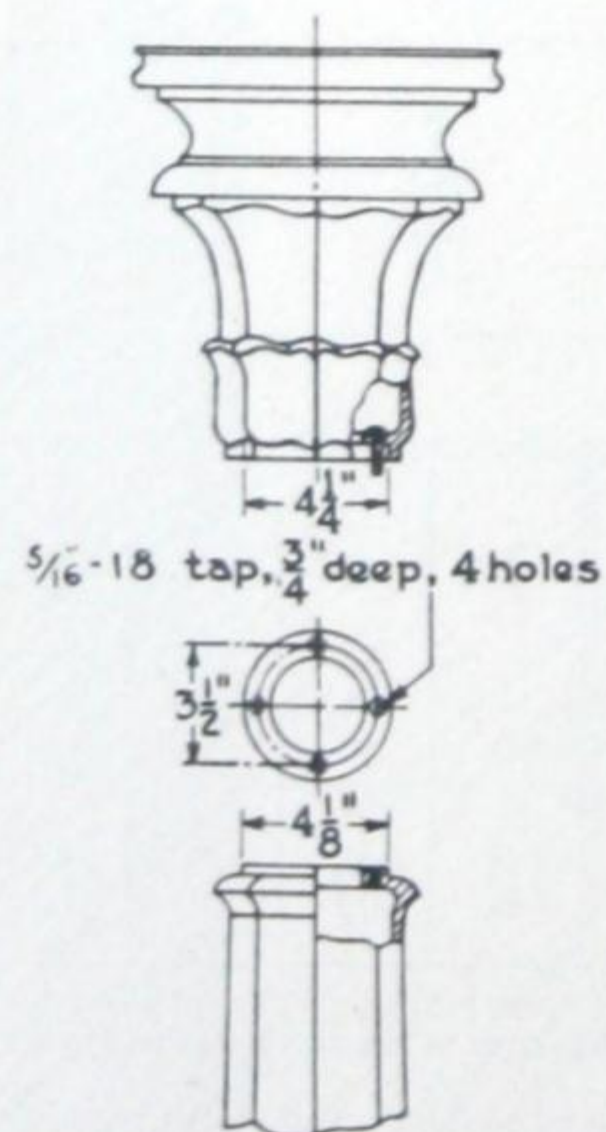
G-E. Form-9



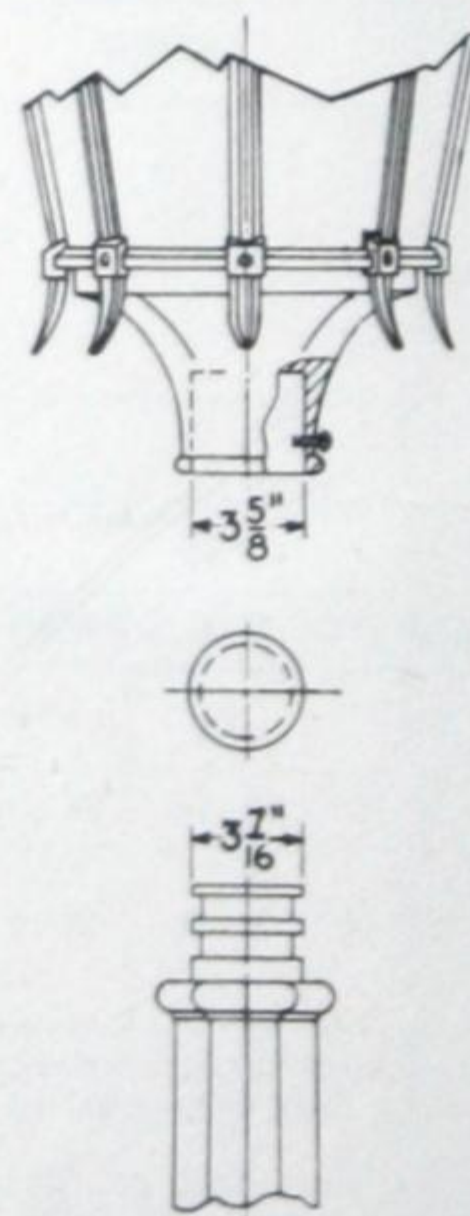
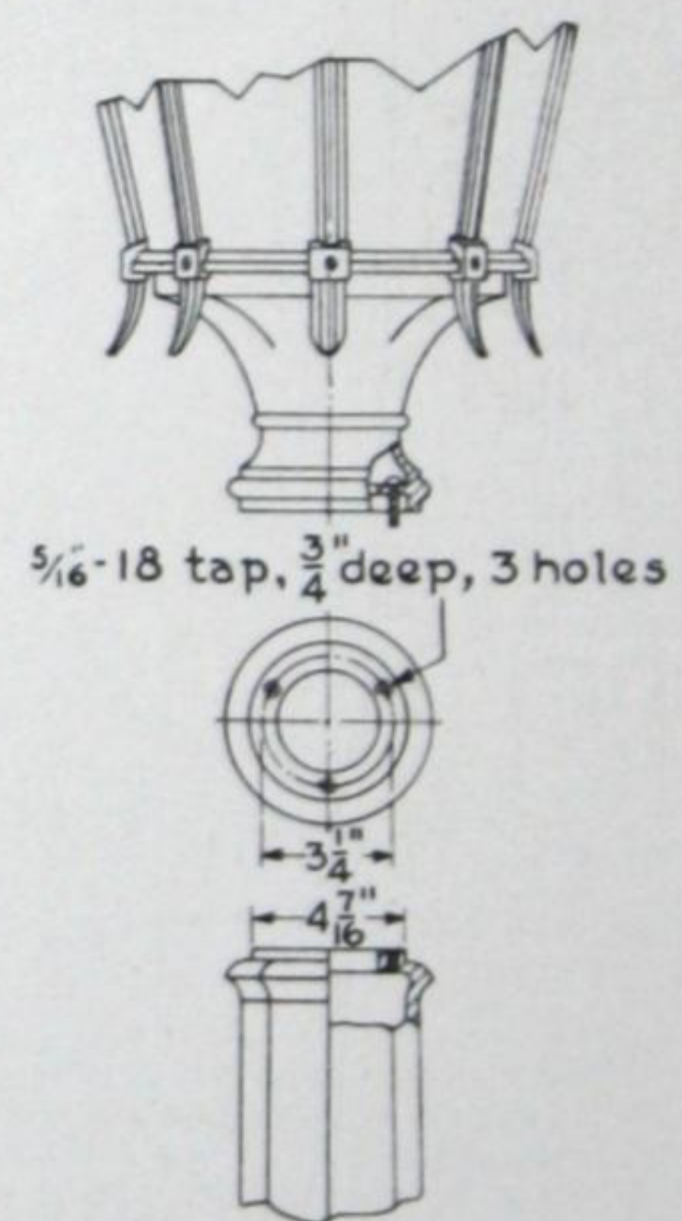
G-E. Form-12



G-E. Form-13

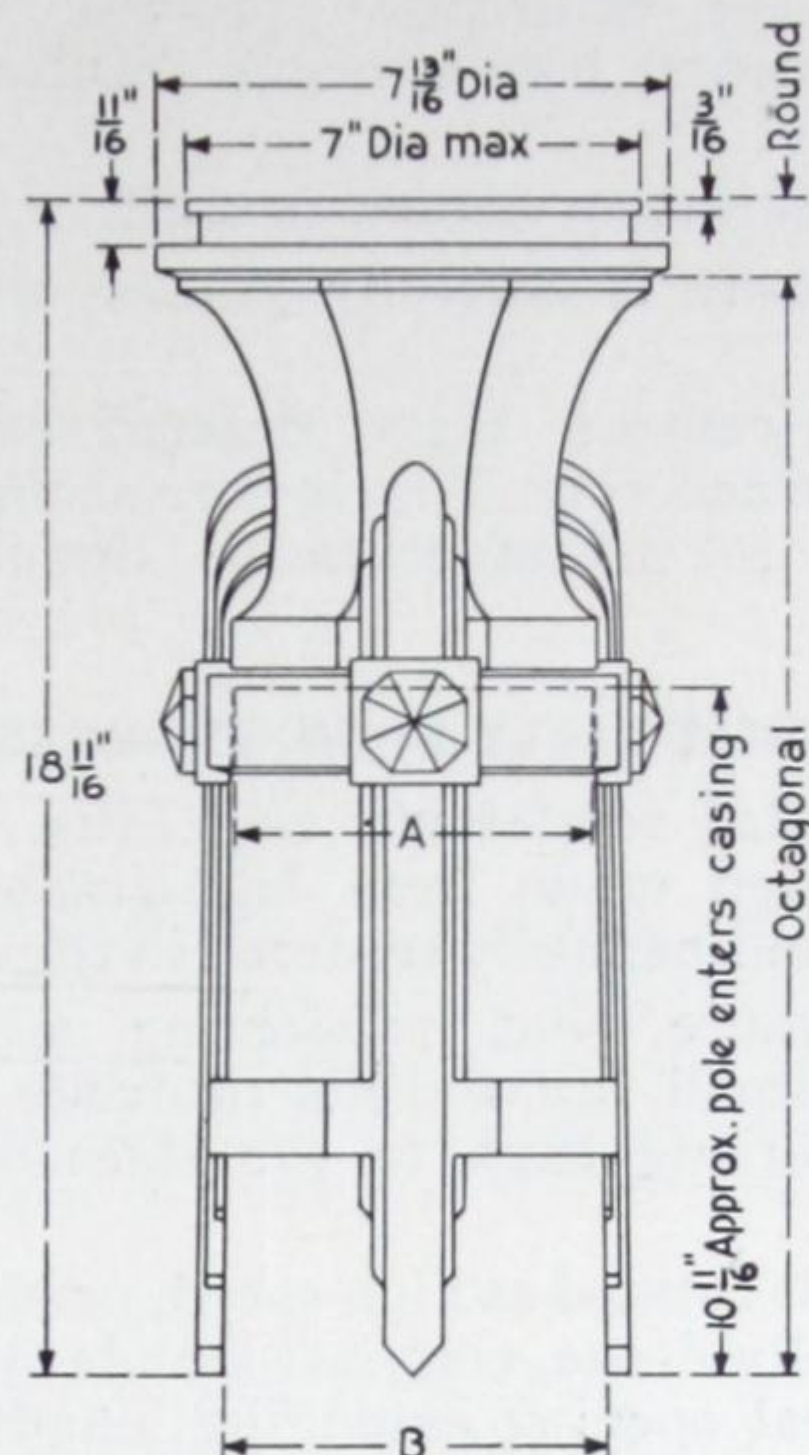
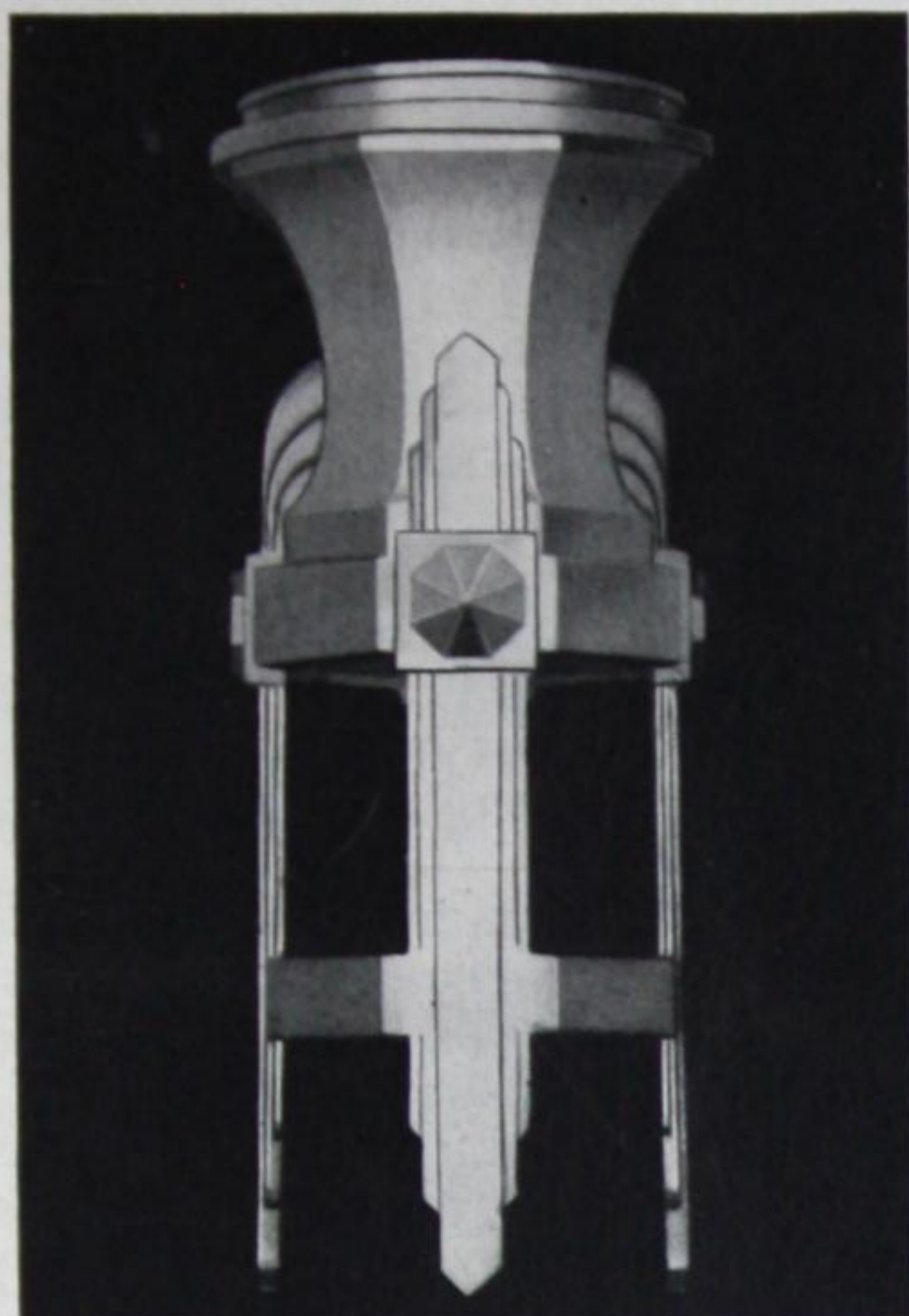


G-E. Form-16

G-E. Form 18-A Lantern
SK CasingG-E. Form 18-B Lantern
RW Casing

G-E NOVALUX FOLIUM CASING

For Concrete Standards



Urban Design Pole Height in Ft	DIMENSIONS ACROSS FLATS		Cat. No.	LIST PRICE Class GO-51	
	A	B		Aluminum	Bronze
10	5 13/16	6 1/16	4830715G3 4830715G6	\$8.70	\$13.00
12 and 14	5 9/16	5 13/16	4830715G1 4830715G4	8.70	13.00
13 and 15	5 5/16	5 9/16	4830715G2 4830715G5	8.70	13.00
.....	6	6 1/4	4830715G7	8.70 .....	..... .....

* For American Concrete Corporation Urban design standards with Type S fitter. For other standards refer to dimensions A and B.

AMERICAN CONCRETE LIGHTING STANDARDS

Spun-crete lighting standards are made only by the centrifugal process, which insures a dense, homogeneous granite concrete.

Finest-quality cement is used.

Aggregate is carefully graded crushed granite.

Water-cement ratio determines the strength of concrete. This is very accurately controlled in manufacture of Spun-crete standards.

CENTRIFUGALLY SPUN PROCESS

A welded reinforcing cage, Fig. 1, of special design made from high-grade steel is placed and carefully centered in the mold.

To insure that reinforcing steel is centered, small brass studs protrude from steel reinforcing cage to the sides of the mold.

Mold is rotated at high speed, producing an unusually dense, compact standard with a cylindrical opening extending lengthwise.

A low water-cement ratio is obtained by the centrifugal action, which forces the water to the center of the standard, where it is removed.

Cast metal molds machined on the inside are used exclusively. This insures clean, straight lines and a symmetrical appearance.

The centrifugal process is the only process whereby concrete can be poured into a mold in a plastic state, and, by removal of the excess water through the centrifugal action, obtain the high strengths demanded today.

ADVANTAGES

Granite Spun-crete lighting standards are made from ageless materials formed around, and sealing from the elements, the steel reinforcement which gives them tensile strength. They are not affected by rain, snow, heat, or cold, and will last indefi-

nately, as the granite from which they are made has existed through the centuries.

Granite Spun-crete standards are poor conductors of electricity; in other words, they are good insulators and are well adapted for the high-voltage economical straight-series street-lighting circuits.

Being of one-piece construction, Granite Spun-crete standards are fully assembled and ready for installation. They are the only double-strength posts on the market, having both tensile strength from the steel and compressive strength from the concrete. This makes them the safest standards to place on the streets. Water and rain tend to harden concrete, thus increasing their strength with age.

Granite Spun-crete standards require no actual maintenance, such as painting—an item of considerable importance in street lighting. The natural stone color of granite Spun-crete standards is in perfect color harmony with the modern stone buildings of today. This same color tone is in pleasing contrast with the natural surroundings of beautiful residential streets. The aggregate used imparts an attractive appearance resembling cut and polished granite.

Granite Spun-crete standards not only serve their purpose of utility at night, but are also ornamental by day.

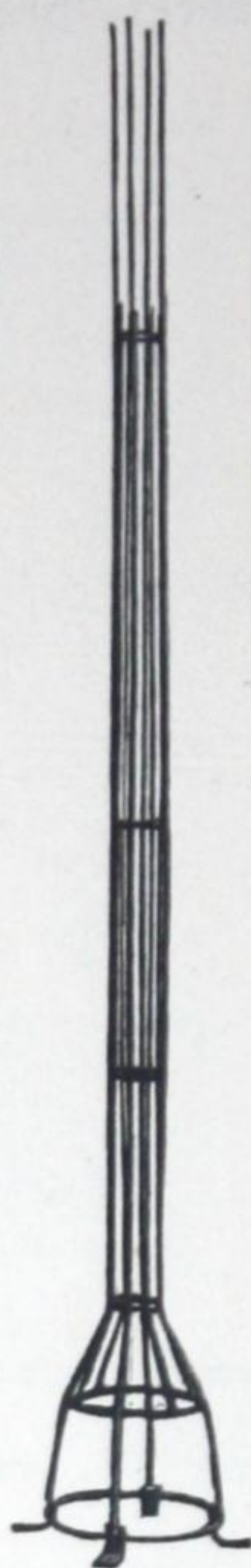


Fig. 1
Cage

CURING

Spun-crete standards are cured for 28 days by a steam process.

During the curing, the most favorable conditions are obtained by maintaining the correct temperature in the curing room and by regulating the amounts of water taken up by the product.

Careful curing insures the ultimate in strength, in wear resistance, in bond strength, and in watertightness.

When an emergency shipment of less than 30 days is required, Spun-crete standards of equal strength may be obtained in seven days by the

GENERAL

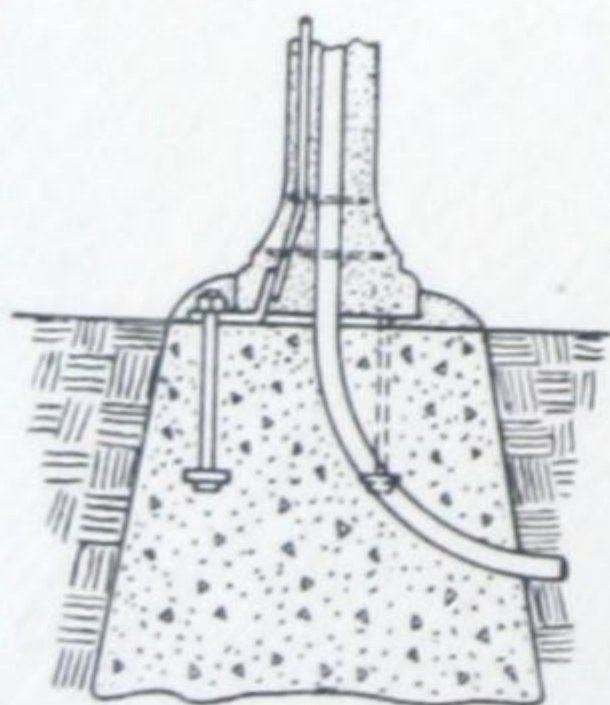


Fig. 2
Bolting-spider base

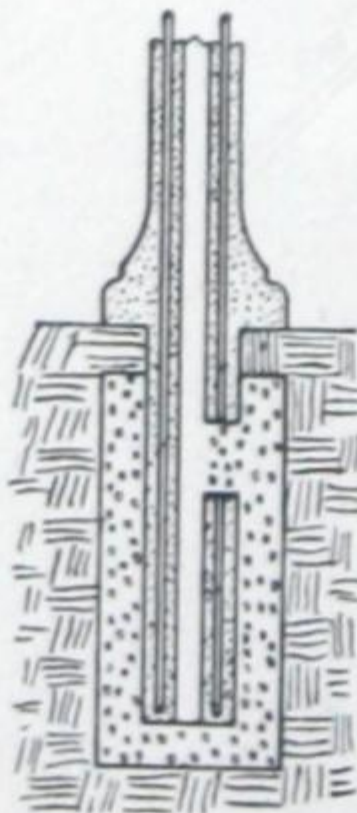


Fig. 3
Precast-butt base

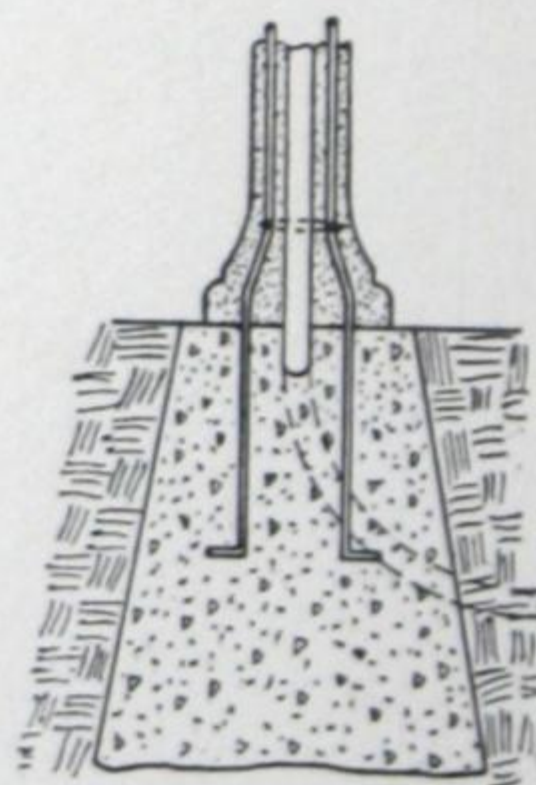


Fig. 4
Extended-rod base

AMERICAN CONCRETE LIGHTING STANDARDS

use of a high-early-strength cement at an increased cost.

CORE

Standards have a 2-inch diameter cored hole, except Design A-569-D2, which has a 1-inch hole.

When desired, a 2-in. galvanized pipe core may be obtained in the finished standard at a nominal increase in cost.

FINISH AND AGGREGATE

Flat surfaced standards may be water-polished so as to give a glossy smooth surface that shows the beauty of the granite aggregate.

Standards having round, fluted, or irregular surfaces can not be water-polished but may be acid-etched.

Flat surfaced standards may also be acid-etched at no increased cost.

Spun-crete standards are furnished in black and white aggregate as standard.

Red and white aggregate can be furnished at no increased cost upon request.

Green and white aggregate can be furnished at a slightly increased cost.

ANCHORING

Standards can be obtained with three types of anchoring foundations:

1. Integral precast butt (Fig. 3).
2. Extended rod (Fig. 4).
3. Bolting spider (Fig. 2).

The integral precast type foundation may be embedded directly in the ground. A rectangular opening in the side of the butt permits access for wiring.

The reinforcing rods of the extended-rod foundation type project so that they may be

embedded in the concrete foundations as poured at the installation site.

The internal reinforcing rods of the bolting-spider type are welded to a steel spider which is drilled for standard anchor bolts. The anchor bolts are set in concrete foundations in advance. The standard is erected and bolted in place. Bolts, nuts, and spider are then covered by thin cement grout.

A three-lug bolting spider is standard; a four-lug spider can be obtained at no increase in cost.

Anchor bolts are not included in the price of the bolting-spider type.

BASES

The Colonial design may be obtained with a special base to permit the use of a Type IL transformer (Fig. 5).

With the transformer base, a hole should be recessed in the foundation as illustrated in Fig. 5.

The Urban and Colonial designs are supplied with octagonal bases. Round bases can be supplied at no increased cost on the Colonial-10, -12, -13, and -15.

LUMINAIRES

The Novalux Forms 33, 33A, 33B, 38, and 56 luminaires are used with Spun-crete standards.

FITTERS

The luminaire is fastened to the standard by one of three methods, Type P, Type I, or Type S. All standards are available in any of the three types of fitters, as desired.

The Type P fitter (Fig. 6) includes an adapter that is cast into the standard to which the luminaire may be attached directly.

The Type I fitter (Fig. 6) includes an adapter to which the luminaire can be attached. The adapter is fastened to the standard by means of three brass studs that are screwed into brass inserts cast integral with the top of the standard.

The Type S fitter (Fig. 6) has a straight shaft without the usual flared top. A folium casing is used with this type of fitter.

Folium casings are standard in cast aluminum but can be furnished in bronze.

Unless otherwise specified, the Type P fitter will be furnished.

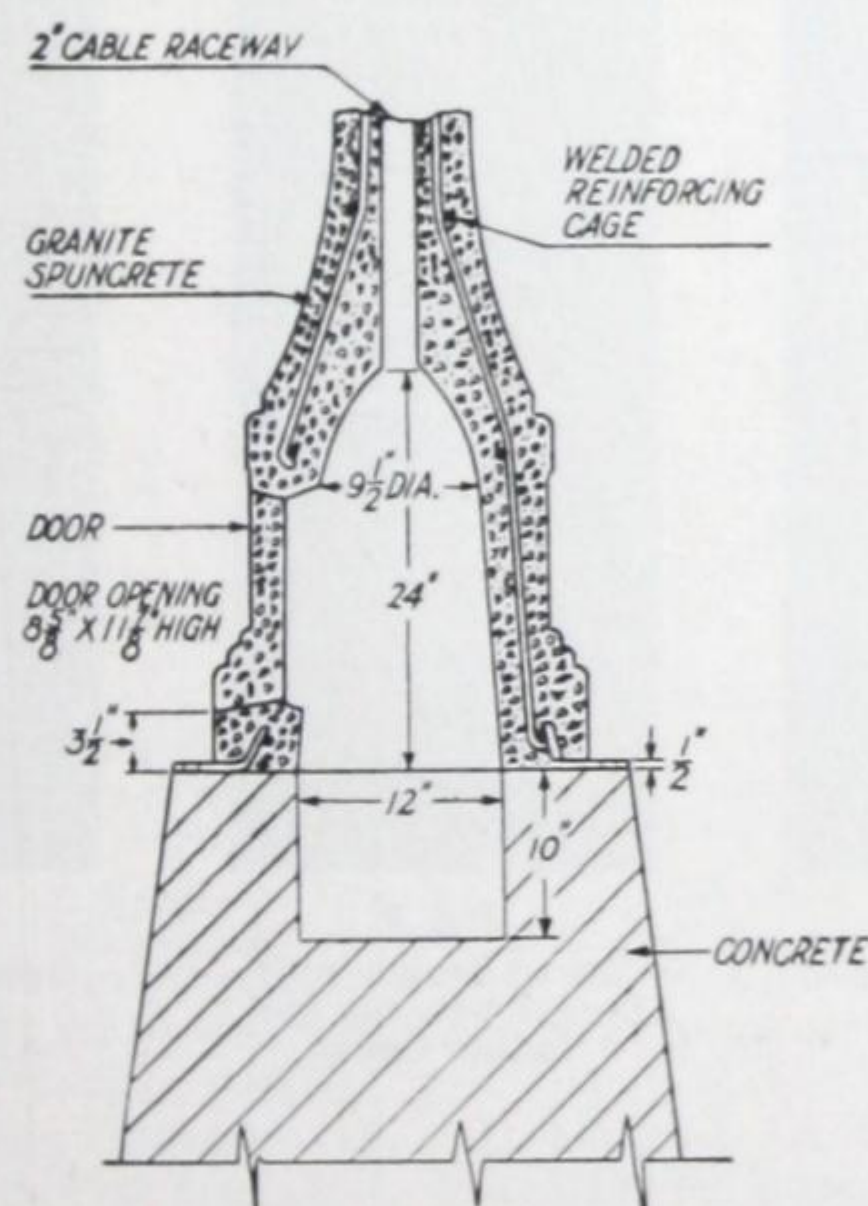


Fig. 5
Transformer base

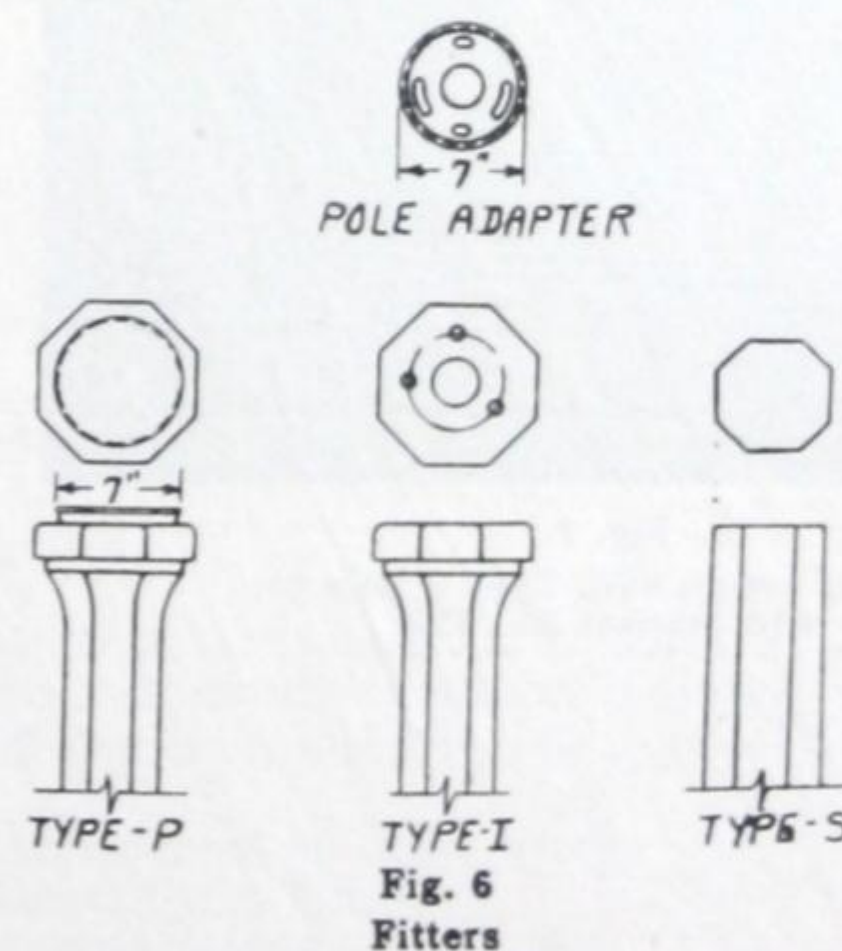


Fig. 6
Fitters

AMERICAN CONCRETE LIGHTING STANDARDS

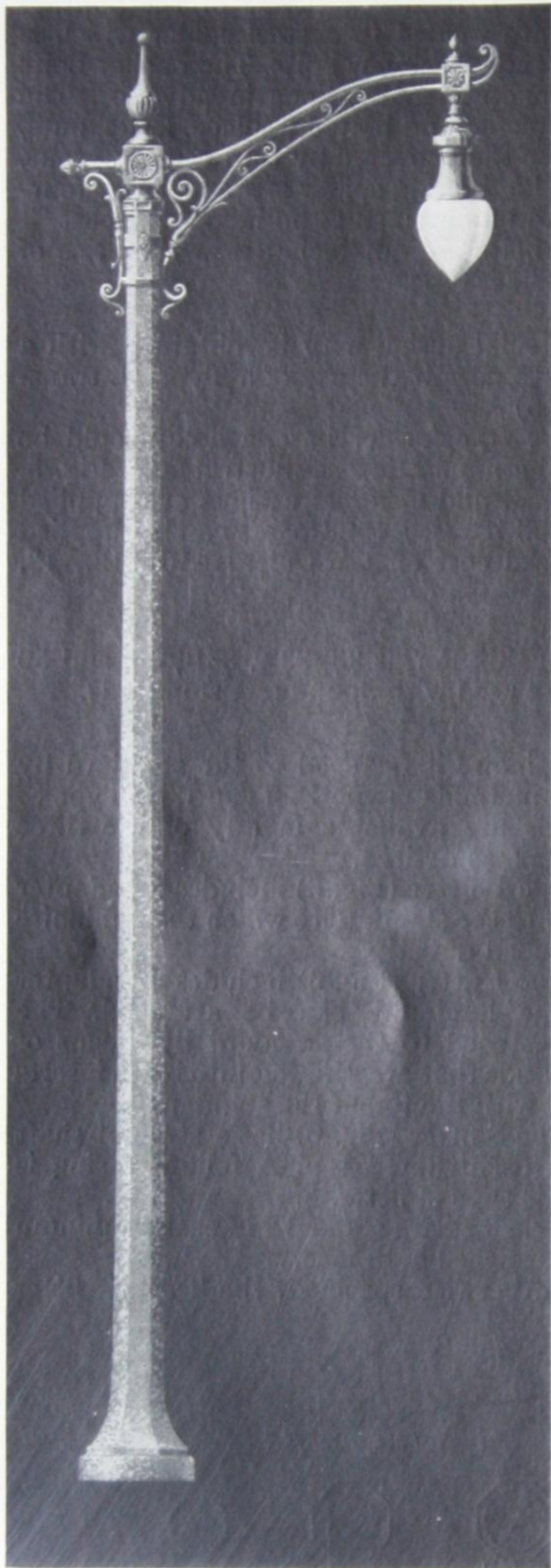


Fig. 7
Colonial design with Type S pole top
and bracket No. 312

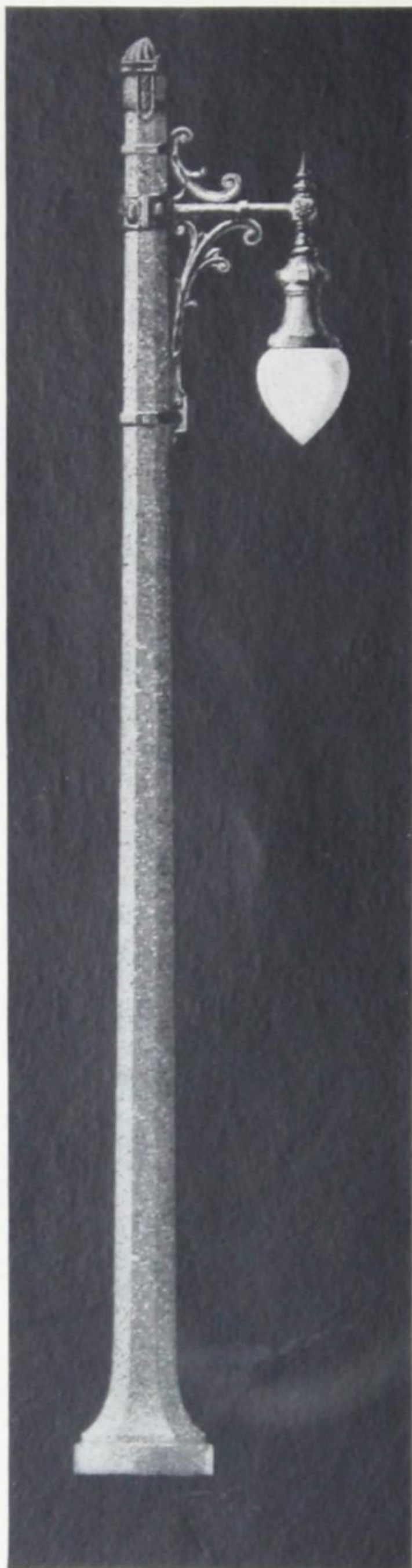


Fig. 8
Colonial design with Type S pole
top and bracket No. 311



Fig. 9
Urban design with
Type S pole top and
folium casing



Fig. 10
Urban design with
Type P or I
pole top

AMERICAN CONCRETE LIGHTING STANDARDS



Fig. 11
Form 56 G-E luminaire



Fig. 12
Form 33 G-E luminaire,
No. 124-1124 glassware,
ornamental ribs



Fig. 13
Form 33A G-E luminaire

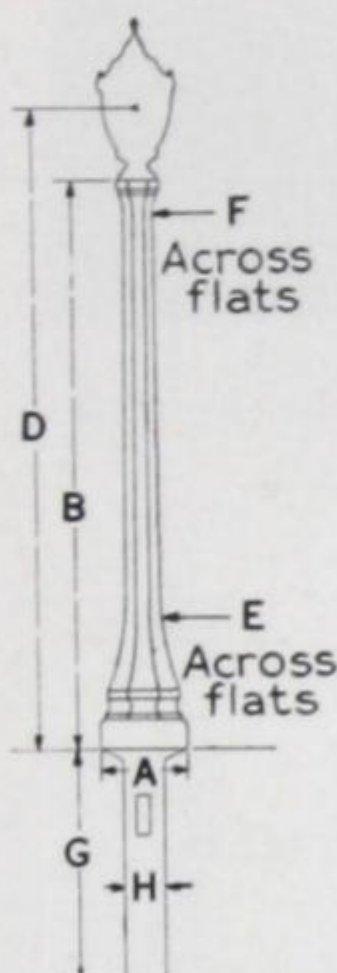


Fig. 14

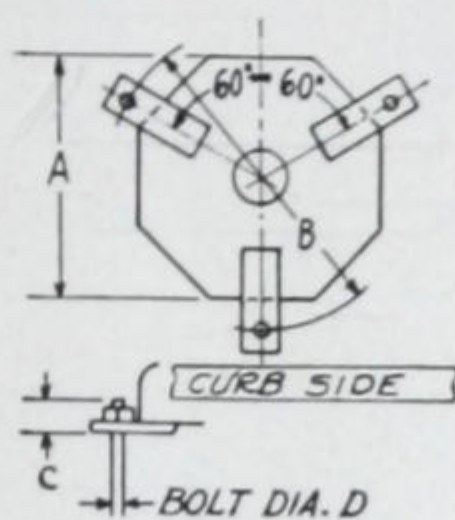


Fig. 15
Plan of spider base

Base diameter in in.	A	16	18	22	25
Diameter bolt circle in in.	B	21½	21½	25	29
Projection above foundation in in.	C	1½	1¾	1¾	2½
Diameter of anchor bolts in in.	D	⅝	¾	⅝	1
Recommended length of bolts in in.		18	18	18	18

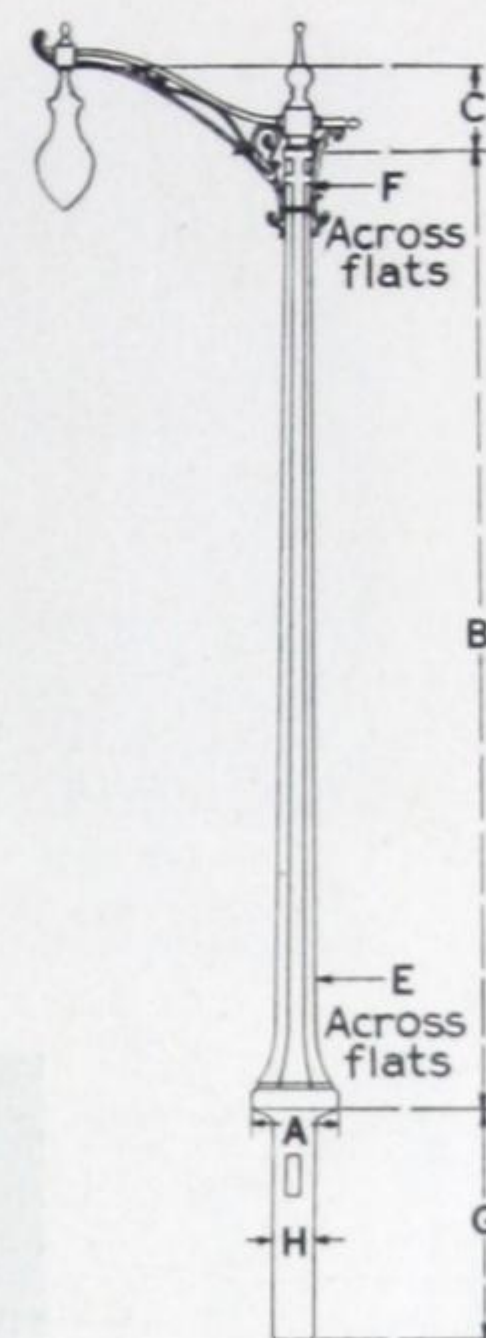


Fig. 16

STANDARDS FOR UPRIGHT LUMINAIRES

AMERICAN CONCRETE CORP DESIGN NO.	A	B	D *			E	F	G	H	APPROX SHIP. WT OF POLES			△ LIST PRICE OF EACH POLE Class GO-51 Types P or I Fitter
			FORM NO. G-E LUMINAIRE										
			33	33A	56								
	In.	Ft-In.	Ft-In.	Ft-In.	Ft-In.	In.	In.	Ft-In.	In.	Precast Butt	Extended Rod	Spider Base	
Urban-10	18	10-0	11-6	11-2	11-2	7¾	5¾	4-0	10	950	600	650	\$72.00
Urban-12	18	12-0	13-6	13-2	13-2	8¼	5½	4-0	10	1050	700	750	80.00
Urban-13	18	13-0	14-6	14-2	14-2	8¾	5¼	4-0	10	1100	750	800	84.00
Urban-15	18	15-0	16-6	16-2	16-2	8¾	5¼	4-0	10	1300	950	1000	92.00
Urban-16	18	16-0	17-6	17-2	17-2	8¾	5¾	4-0	10	1350	1000	1050	96.00
Colonial-10	16	10-0	11-6	11-2	11-2	8¼	5¾	4-0	10	750	400	450	72.00
Colonial-12	18	12-0	13-6	13-2	13-2	8¼	5¾	4-0	10	900	550	600	80.00
Colonial-13	18	13-0	14-6	14-2	14-2	8¼	5¾	4-0	10	950	600	650	84.00
Colonial-15	18	15-0	15-6	15-2	15-2	8¾	5½	4-0	10	1100	700	750	92.00
Colonial-16	18	16-0	16-6	16-2	16-2	8¾	4¾	4-0	10	1150	750	800	96.00
Colonial-17	22	16-9	18-3	17-11	17-11	10½	7	4-0	10	1500	1100	1150	140.00
Colonial-19	25	19-3	20-9	20-5	20-5	12¼	8½	...	..	1800	1350	1400	† 120.00
Colonial-21	22	21-0	....	....	....	10½	6	4-6	10	2000	1550	1600	† 125.00
Colonial-24	25	23-9	....	....	....	12¼	7	...	..	....	1950	2000	† 150.00
Colonial-26	25	26-0	....	....	....	12½	6½	...	..	....	2150	2200	† 175.00
† Colonial-TR-10	22	10-4	11-10	11-6	11-6	8¼	5¾	...	..	....	640	690	87.00
† Colonial-TR-13	22	13-6	15-0	14-8	14-8	8¼	5¾	...	..	....	840	890	99.00
† Colonial-TR-14	22	14-6	16-0	15-8	15-8	8¼	5¾	...	..	....	890	940	103.00
† Colonial-TR-16	22	16-6	18-0	17-8	17-8	8¾	5½	...	..	....	990	1040	111.00
† Colonial-TR-17	22	17-6	19-0	18-8	18-8	8¾	4¾	...	..	....	1040	1090	115.00

Prices of poles do not include G-E luminaires, transformers, anchor bolts, or folium casings.

* Light-center dimensions are given for luminaires illustrated above, and will vary slightly for other types of glassware.

† Subject to Class GO-51 except net prices as, figured by applying discount, are f.o.b. factory. Add actual freight and not percentage delivery additions.

△For Type S fitter—deduct \$8.70 from list price.

† TR indicates transformer with door openings 8¾ by 11¾ in. for 25,000-lumen transformer.

Add \$1.00 to list price for bronze inserts in side of standard for making attachments.

Add \$1.00 to list price for bronze inserts in side of standard for making attachments.

Order folium casings from Lynn River Works and specify standard on which they are to be mounted (see page 12).

Designs Colonial-10, -12, -13, and -15 may be furnished with round base at same price. Octagonal bases furnished unless otherwise specified. Transformer bases always octagonal.

Spider bases usually furnished with three lugs. Four lugs available on request at same price.

Pipe in center of standard available at increased price. Apply to nearest Sales Office.

When ordering standards, mention Form number of G-E luminaires and casing to be used.

Standards can be furnished with door opening in base for mounting pothead cutout, relay, or fuse cutout. Add \$14.50 to list price.

Standards can be furnished with small door opening for splicing cable. Add \$3.50 to list price.

AMERICAN CONCRETE LIGHTING STANDARDS

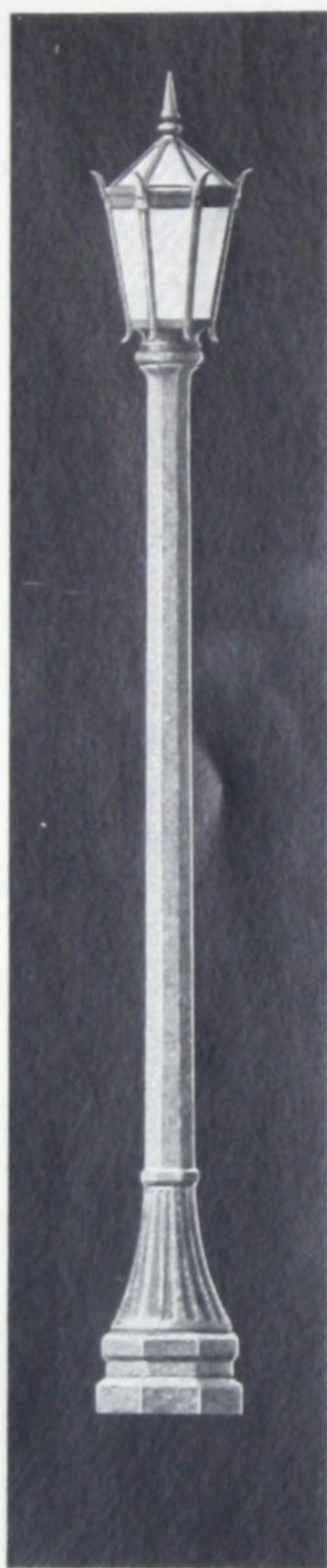


Fig. 17
Centennial 11 design
with Type P pole top

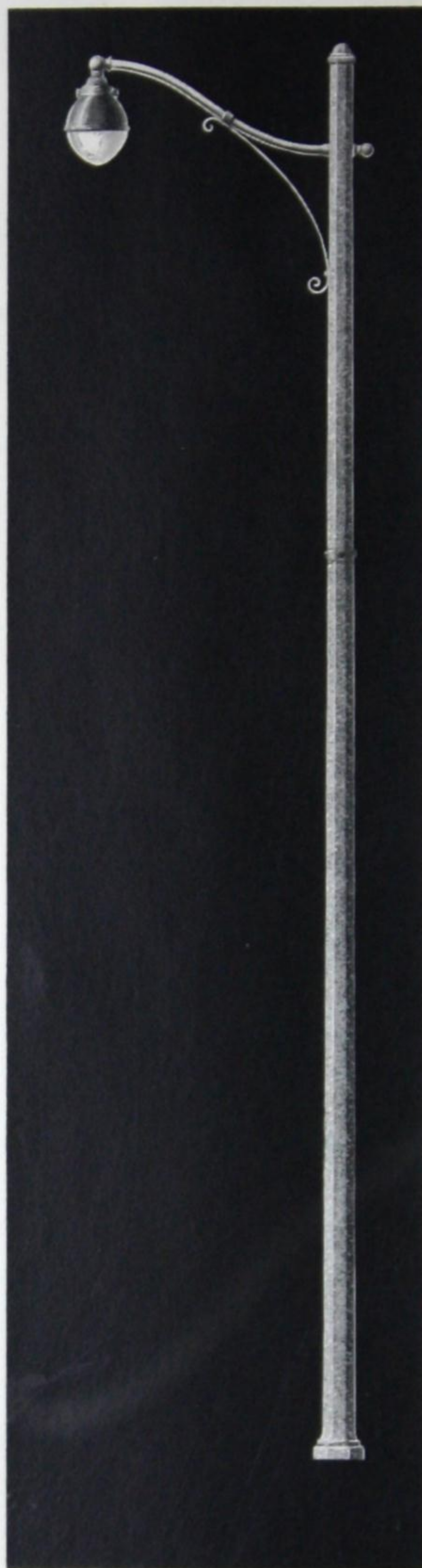


Fig. 18
A-569-A2 design

AMERICAN CONCRETE LIGHTING STANDARDS



Fig. 19
Form 79 G-E luminaire



Fig. 20
Form 25B G-E luminaire
with No. 108 globe



Fig. 21
Form 45L G-E luminaire
with No. 166 globe



Fig. 22
Form 52 G-E luminaire
with 11-in. bowl reflector



Fig. 23
Form 56 G-E luminaire



Fig. 24
Form 33 G-E luminaire,
No. 124-1124 glassware,
ornamental ribs



Fig. 25
Form 33A G-E luminaire

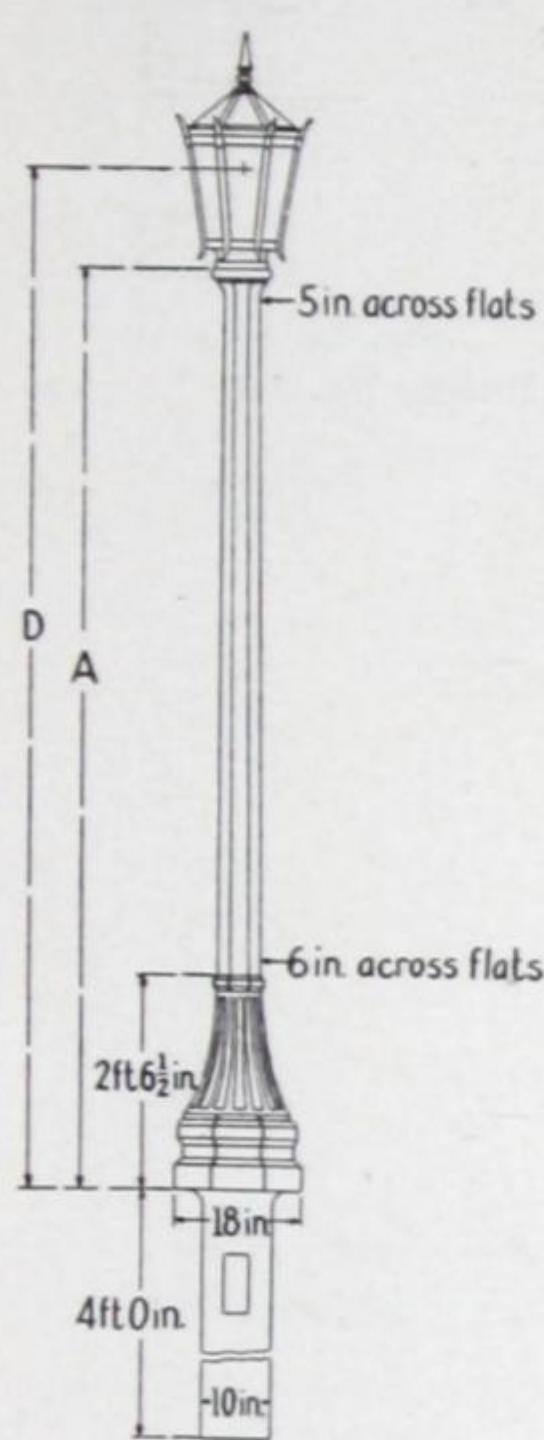


Fig. 26

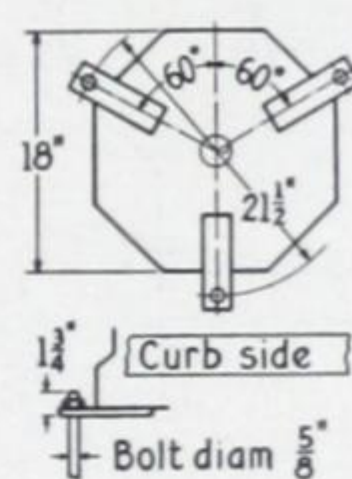


Fig. 27
Plan of Centennial 11 base

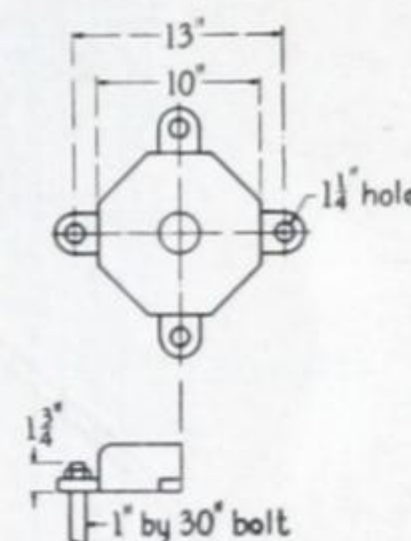


Fig. 28
Plan of A-569-D2 spider base

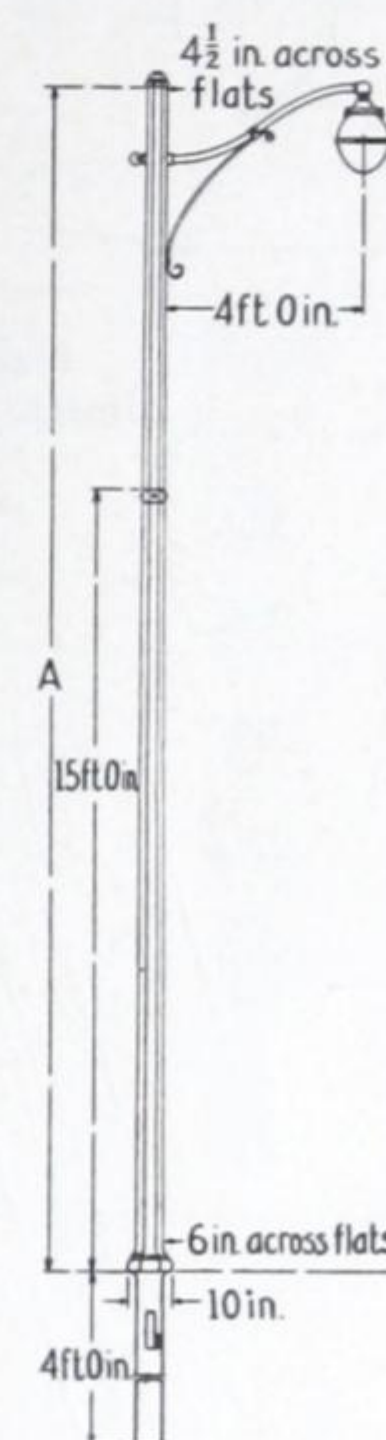


Fig. 29

AMERICAN CONCRETE CORP DESIGN NO.	A Ft.-In.	*D FORM NO. G-E LUMINAIRE							APPROX SHIP. WT		LIST PRICE Class GO-51	
		79	25B	45L	52	56	33	33A	Spider Base	Precast Butt	Type P or S Fitter	Complete with Bracket
		Ft.-In.	Ft.-In.	Ft.-In.	Ft.-In.	Ft.-In.	Ft.-In.	Ft.-In.				
Centennial 11	11-0					12-2 1/2	12-1 1/2	12-2 1/2	475 ...	725	†\$58.00 61.50	..... .....
△A-569-D2-23	23-0	22-0	21-9	21-3 1/2	21-8 1/2				550 ...	650		†\$95.00 95.00
△A-569-D2-25	25-0	24-0	23-9	23-3 1/2	23-8 1/2				625 ...	725		†103.00 103.00

Prices on poles do not include G-E luminaires, transformers, anchor bolts, or folium casings.

* Light-center dimensions are given for luminaires illustrated above, and will vary slightly for other types of glassware.

† For folium casing, add \$8.70 list. See page 59.

△ Standard is made and shipped in two sections. Working load on pole 250 lb, failure at 750 lb.

‡ Bracket can be arranged for 3/4-inch bushing cable inlet at same price. Bushing or inlet is not included (replaces ornament, pole end bracket). Specify Design number and type of fitter.

AMERICAN CONCRETE ORNAMENTAL BRACKETS

For Suspension Luminaires

PENDENT BRACKETS

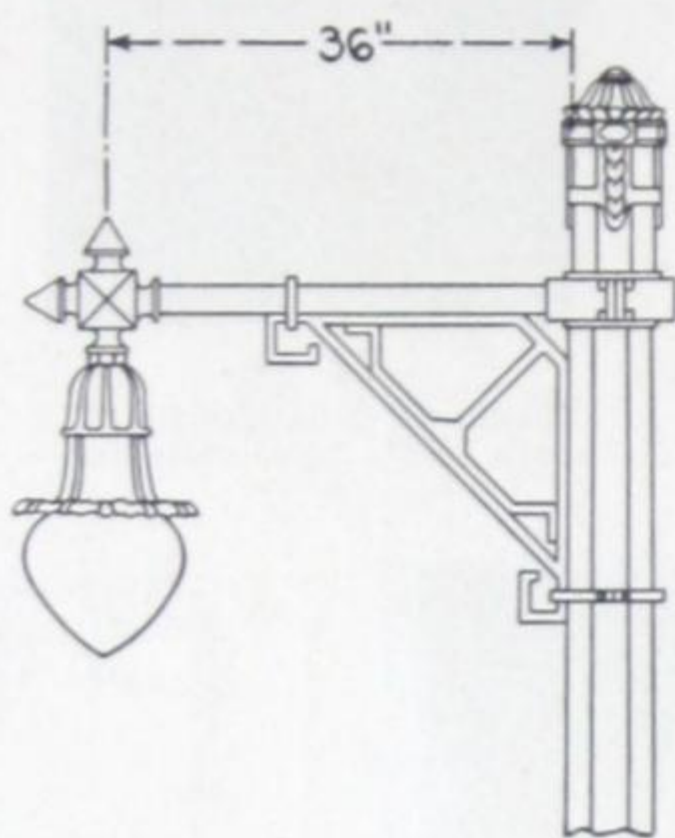


Fig. 30
Design No. 304

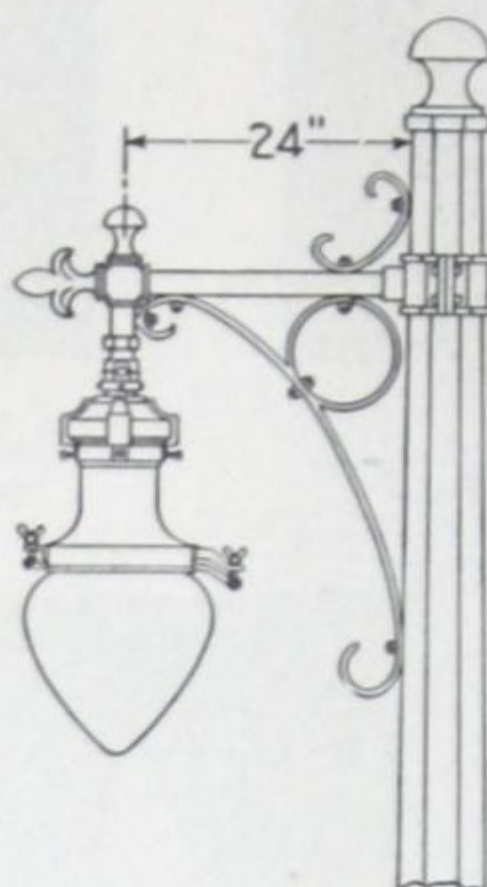


Fig. 31
Design No. 306

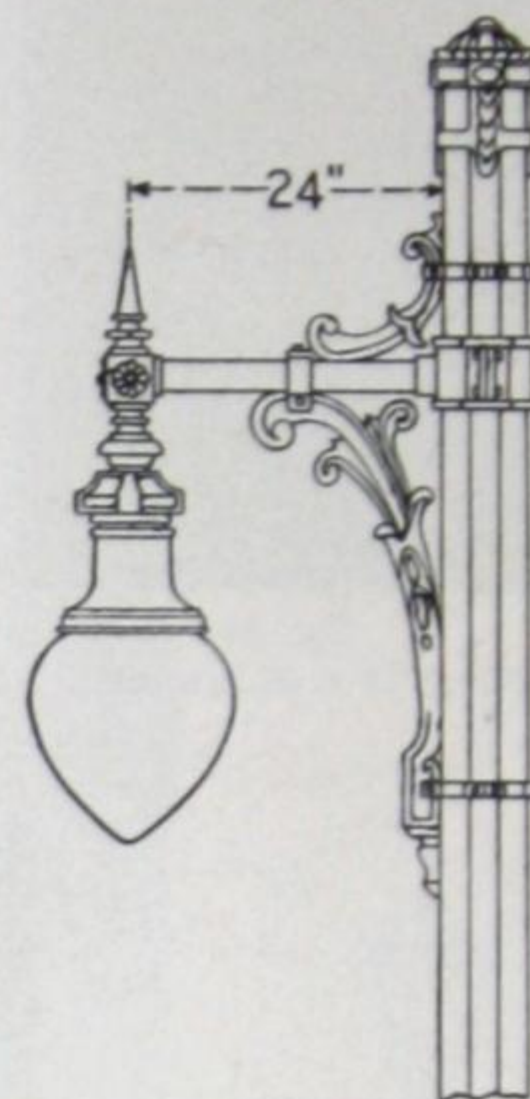


Fig. 32
Design No. 311

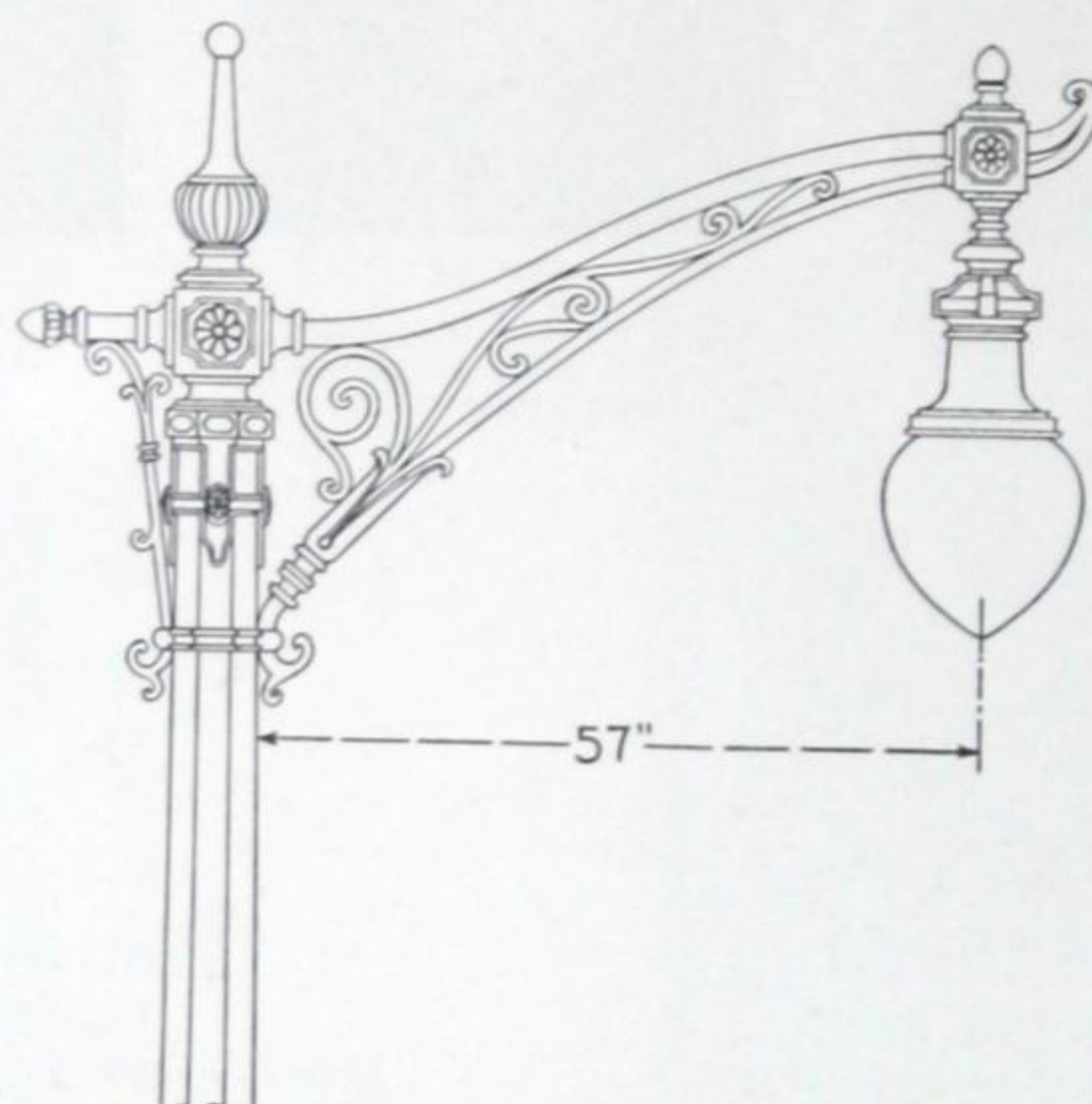


Fig. 33
Design No. 312

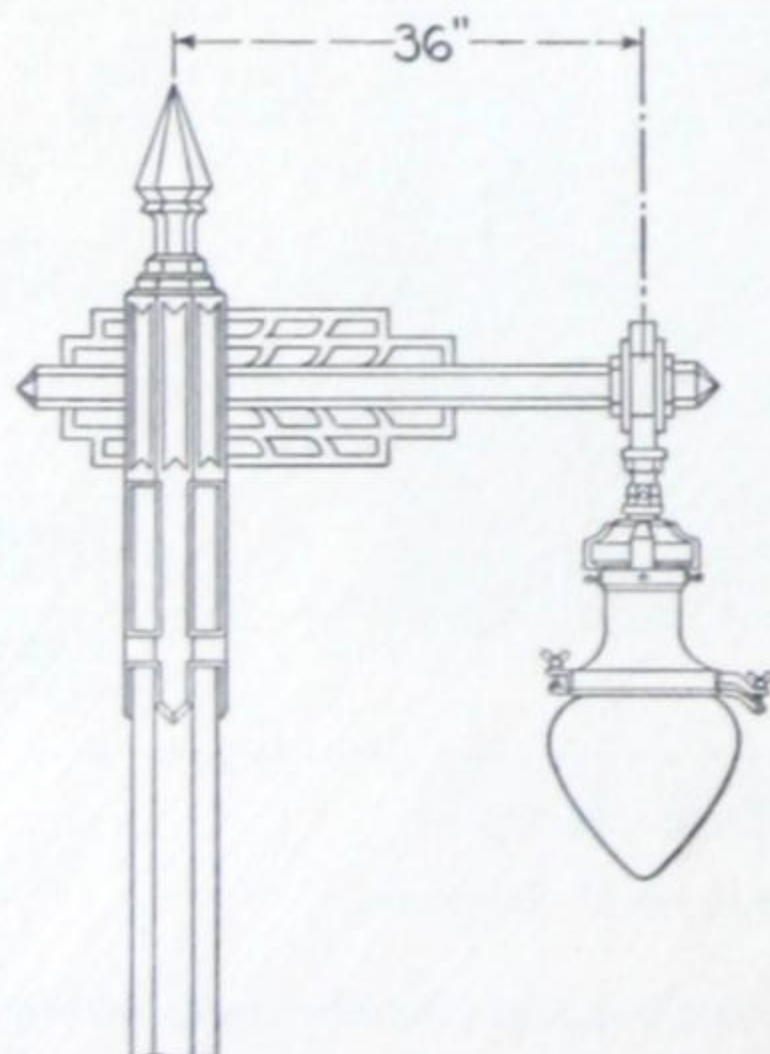


Fig. 34
Design No. 317



Fig. 35
Design No. 318

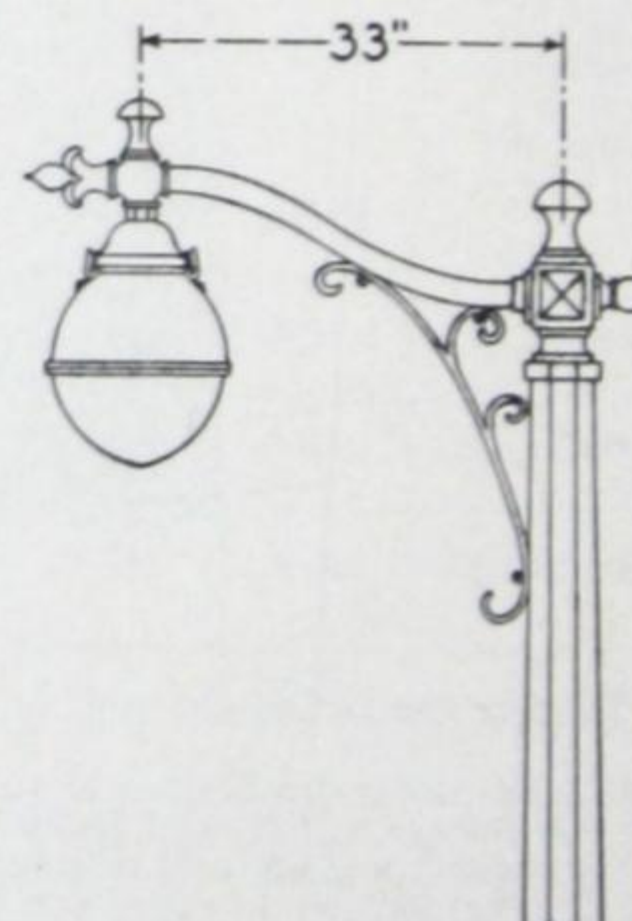


Fig. 36
Design No. 321

AMERICAN CONCRETE ORNAMENTAL BRACKETS



Fig. 37
Form 52, G-E luminaire with
11-in. rippled bowl refractor



Fig. 38
Form 32 G-E luminaire
with No. 146 globe



Fig. 39
Form 79R G-E luminaire



Fig. 40
Form 25C G-E luminaire
with No. 193 globe

DESIGN NO.		△LIST PRICE Class GO-51		APPROX SHIP. WT IN LB	
Single-light	Twin-light	Aluminum	Bronze	Aluminum	Bronze
304		\$64.50	\$90.00	25	70
306		42.95	63.00	20	60
	304	126.00	176.00	43	125
	306	77.10	118.80	35	110
311		64.50	106.00	35	100
312		130.50	.....	75	..
	311	125.50	200.50	70	200
317		100.00	137.20	40	120
318		54.50	71.70	20	60
321		54.50	71.70	20	60
	317	171.50	252.00	76	230
	318	71.70	97.50	40	120
	321	71.70	97.50	40	120

When ordering brackets, mention Form number of G-E luminaire to be used.
Design numbers and prices do not include luminaires or MAZDA Lamps.

△Bracket prices include pole top ornament illustrated with bracket.

AMERICAN CONCRETE ORNAMENTAL BRACKETS

For Ornamental Luminaires
UPRIGHT BRACKETS

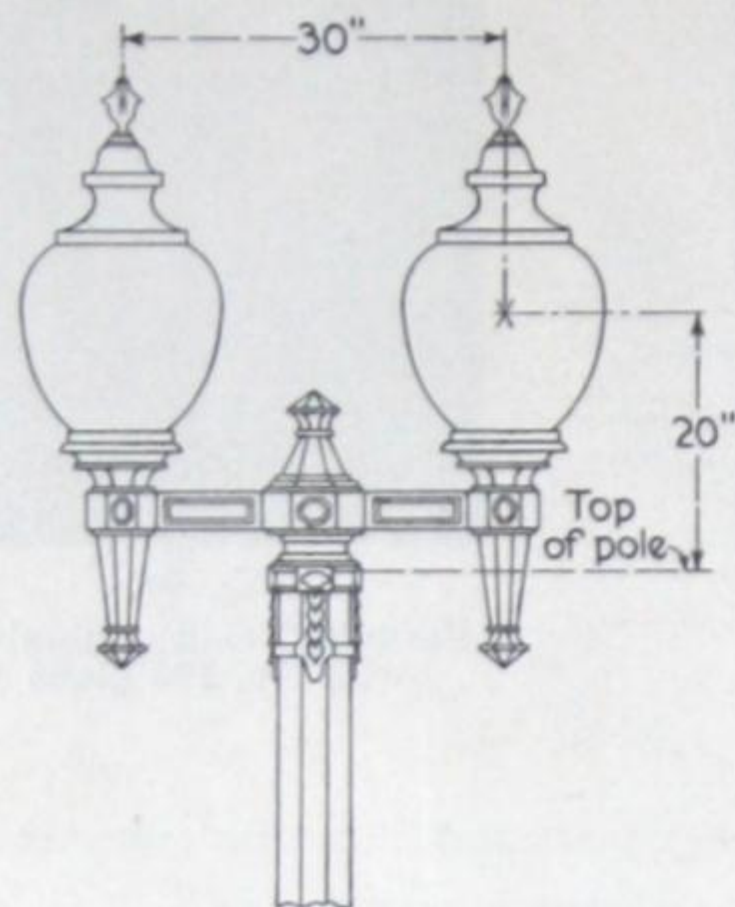


Fig. 45
Design No. 300

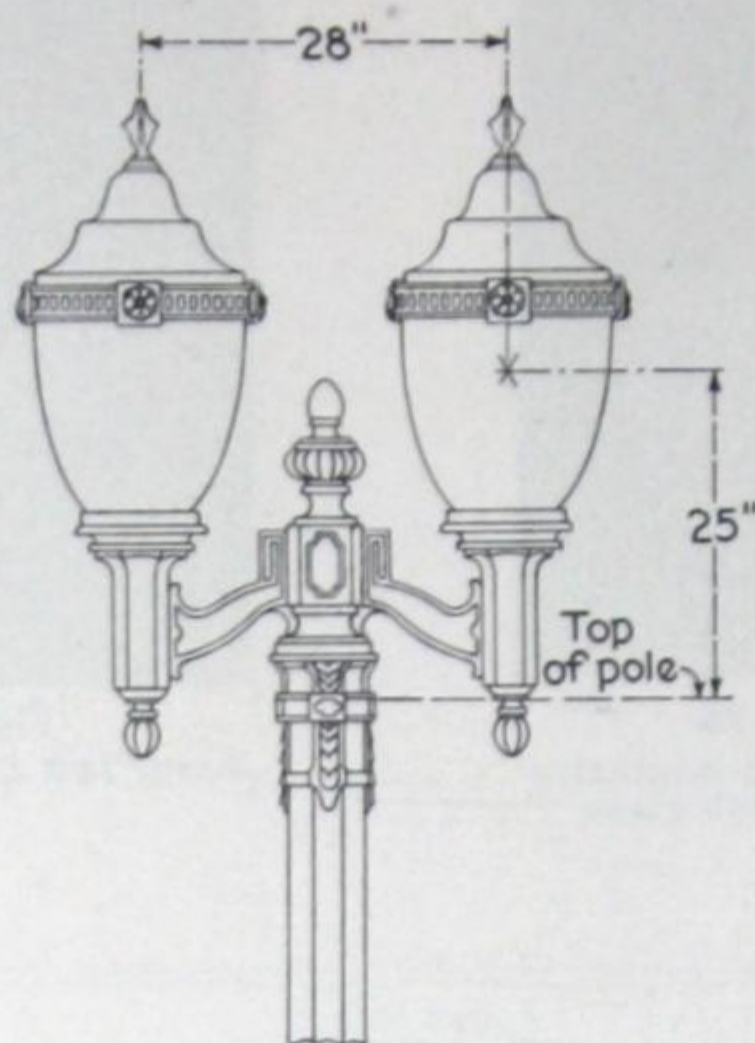


Fig. 46
Design No. 301

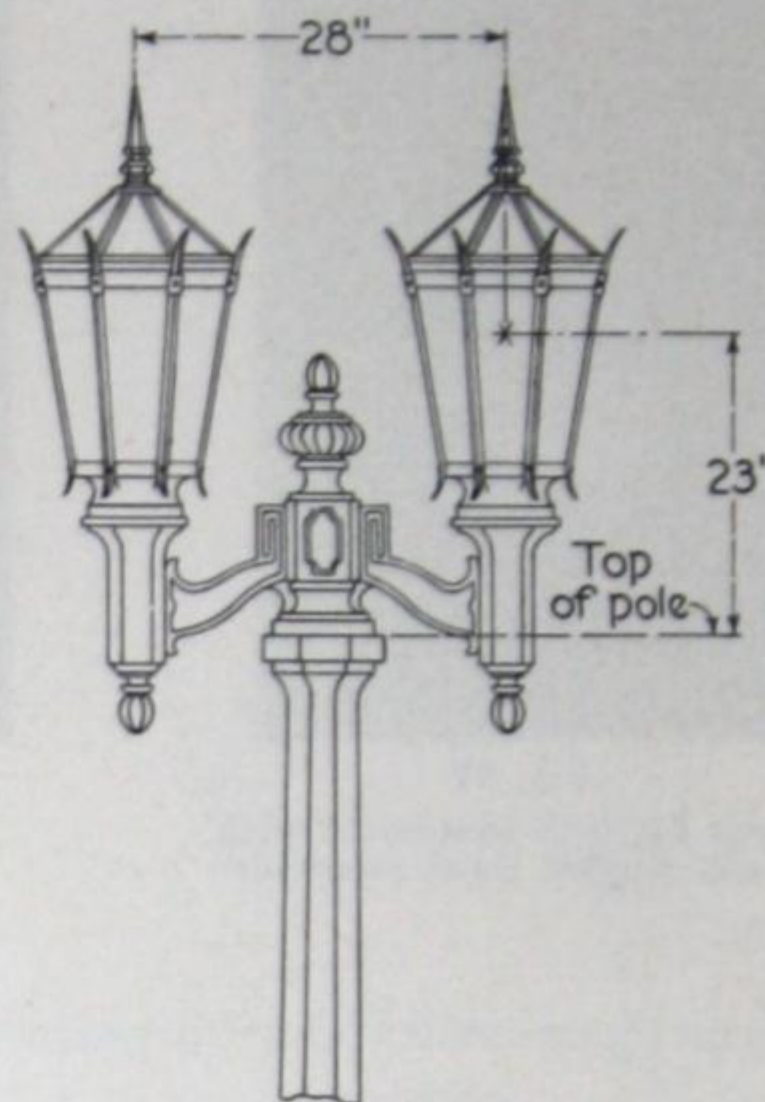


Fig. 47
Design No. 302

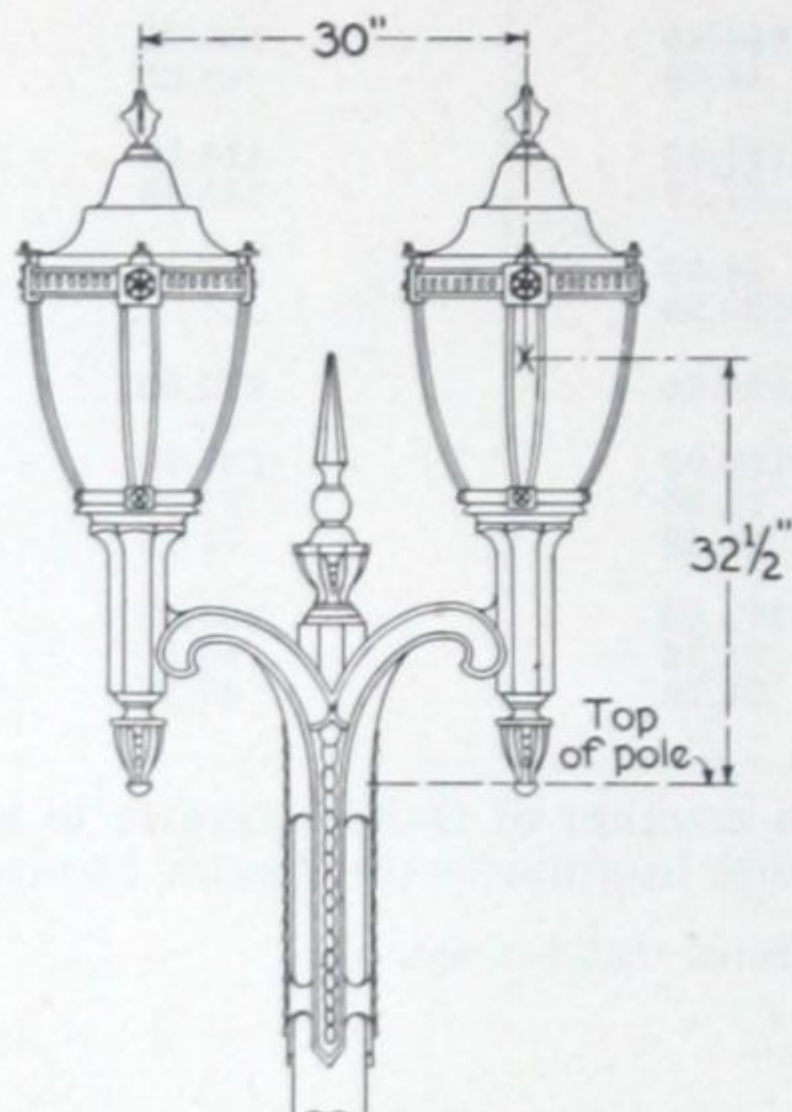


Fig. 48
Design No. 303

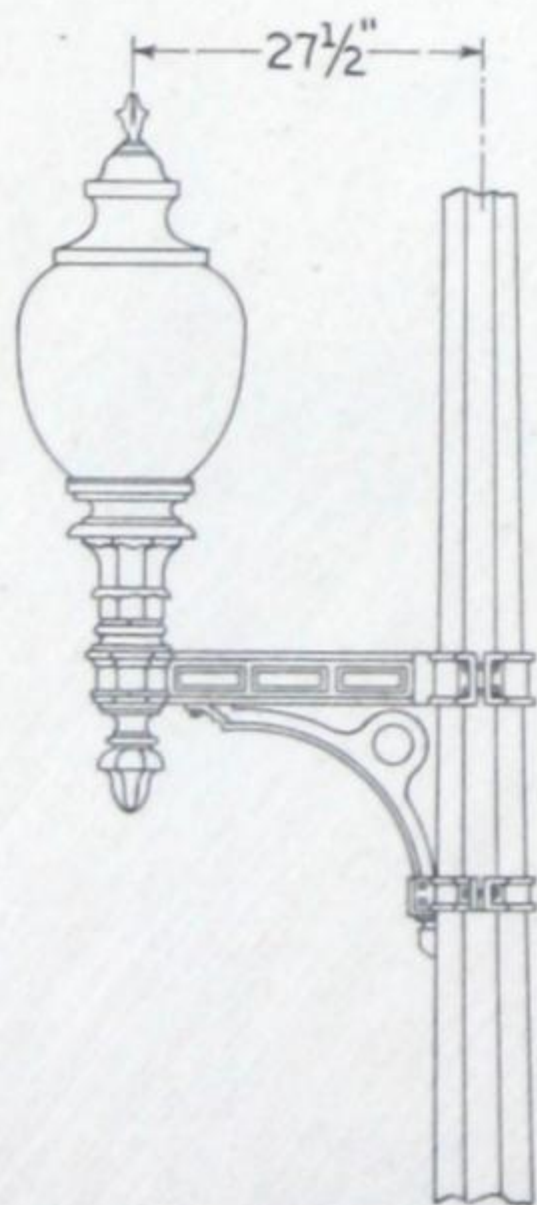


Fig. 49
Design No. 313

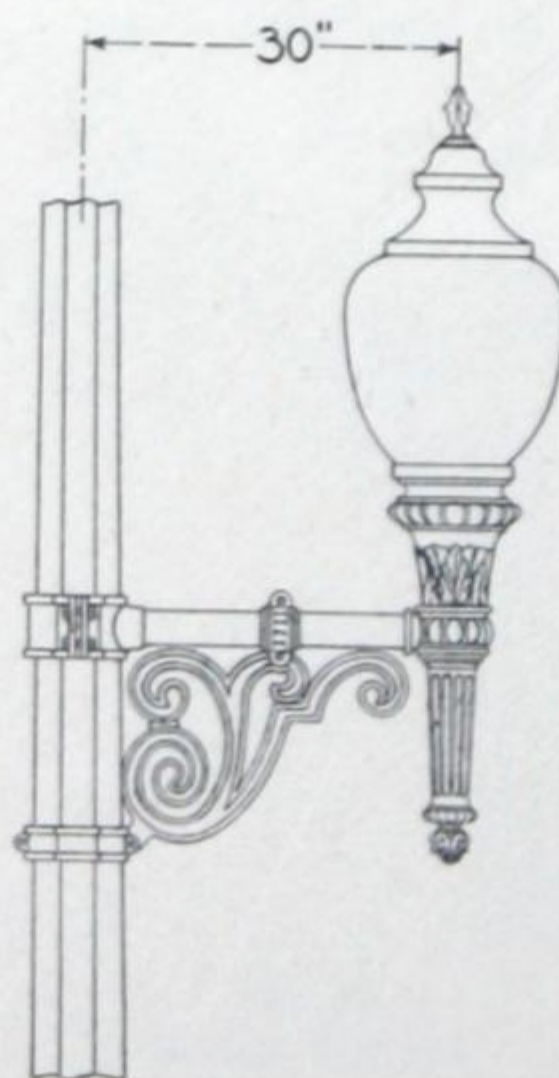


Fig. 50
Design No. 315

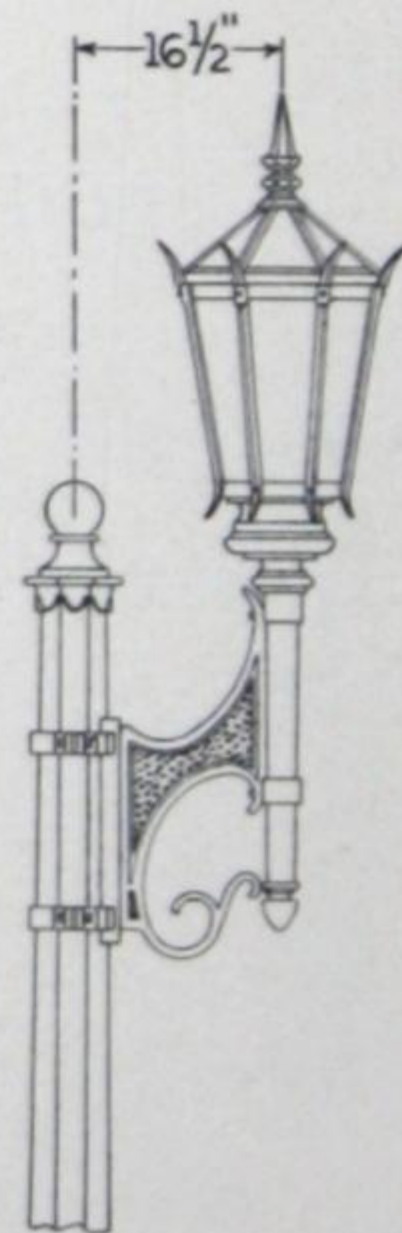


Fig. 51
Design No. 316

AMERICAN CONCRETE ORNAMENTAL BRACKETS

For Ornamental Luminaires



Fig. 41

Form 33 G-E luminaire with
No. 118 alabaster rippled globe
and No. 1118 alabaster
rippled canopy



Fig. 42

Form 33 G-E luminaire with
No. 124 alabaster rippled globe
and No. 1124 alabaster
rippled canopy with
ornamental ribs



Fig. 43

Form 56 G-E luminaire with
glass canopy and spurs



Fig. 44

Form 33 G-E luminaire with
No. 124 alabaster rippled globe
and No. 1124 alabaster
rippled canopy

DESIGN NO.		△LIST PRICE Class GO-51		APPROX SHIP. WT IN LB	
Single-light	Twin-light	Aluminum	Bronze	Aluminum	Bronze
	300	\$55.10	\$86.80	14	42
	301	65.60	101.50	30	90
	302	61.40	97.25	30	90
	303	80.00	172.50	48	140
313		71.70	120.00	26	75
315		71.40	114.50	22	64
316		62.90	123.00	26	75
	313	124.20	207.00	50	148
	315	133.00	214.50	42	125
	316	105.80	205.00	50	148

When ordering brackets, mention Form number of G-E luminaires and casing to be used.
Design numbers and prices do not include luminaires or MAZDA lamps.

△Bracket price includes pole top ornament illustrated with bracket.

UNION METAL ORNAMENTAL BRACKETS

Designs arranged for mounting on Union Metal fluted or monotube poles, wood poles, or tubular steel poles.

Constructed of high-grade, tough gray iron, cast true to pattern and with ornamental details clearly defined.

All parts are carefully ground and fitted to insure accurate alignment when assembled.

Bolts, nuts, and set screws cadmium plated.

Brackets given a shop coat of dark green primer paint unless otherwise specified. Other finishes available at increased cost.

All pipe brackets use 2-inch pipe.

FOR SUSPENSION LUMINAIRES

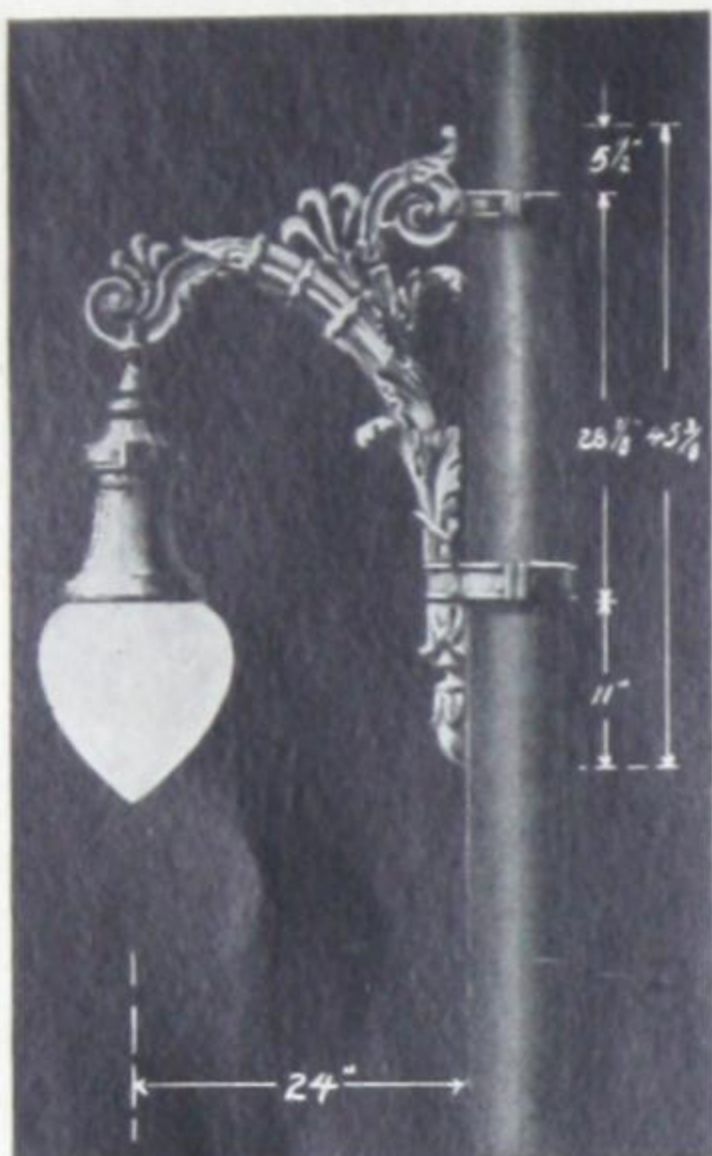


Fig. 1
Design No. 4561
Twin-light design No. 4560

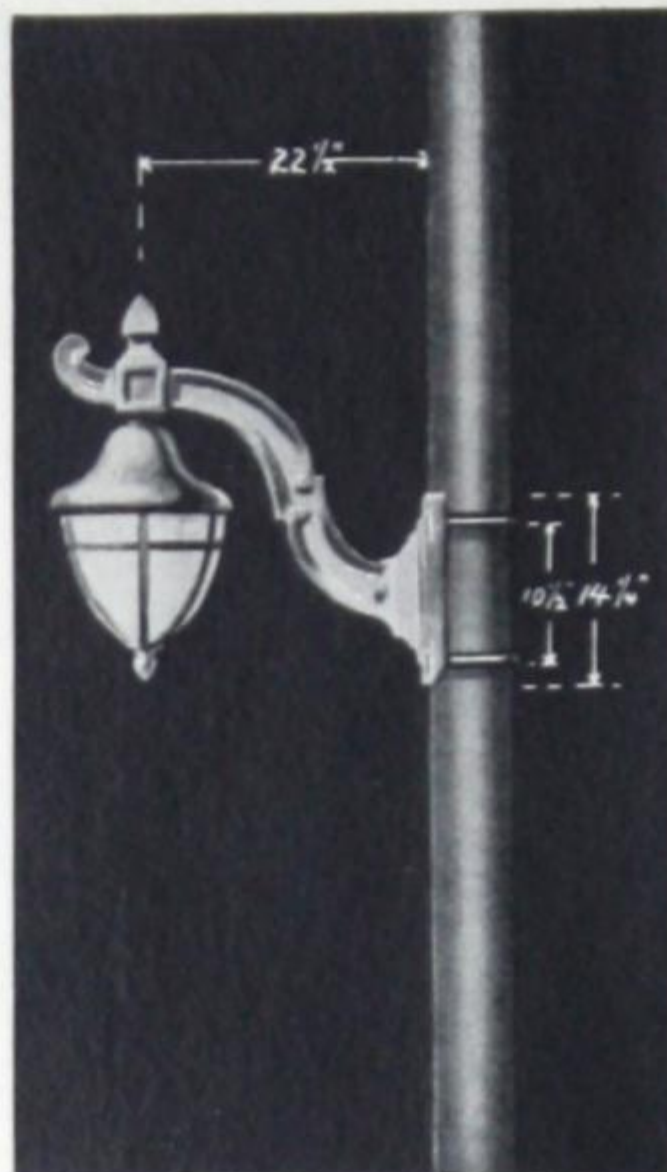


Fig. 2
Design No. 2554
Twin-light design No. 5677
Wood-pole mounting
design No. 2555

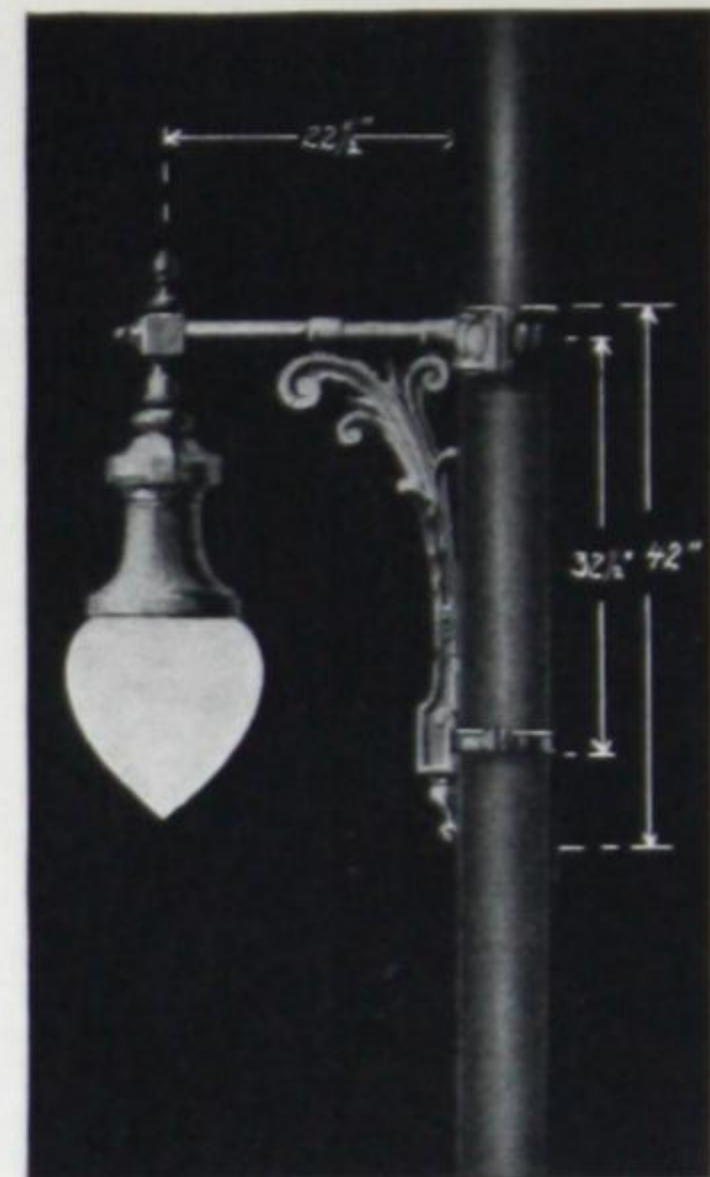


Fig. 3
Design No. 4587
Twin-light design No. 4588
Wood-pole mounting design
No. 5559



Fig. 5
Design No. 5555
Twin-light design No. 5556
Wood-pole mounting design
No. 5557

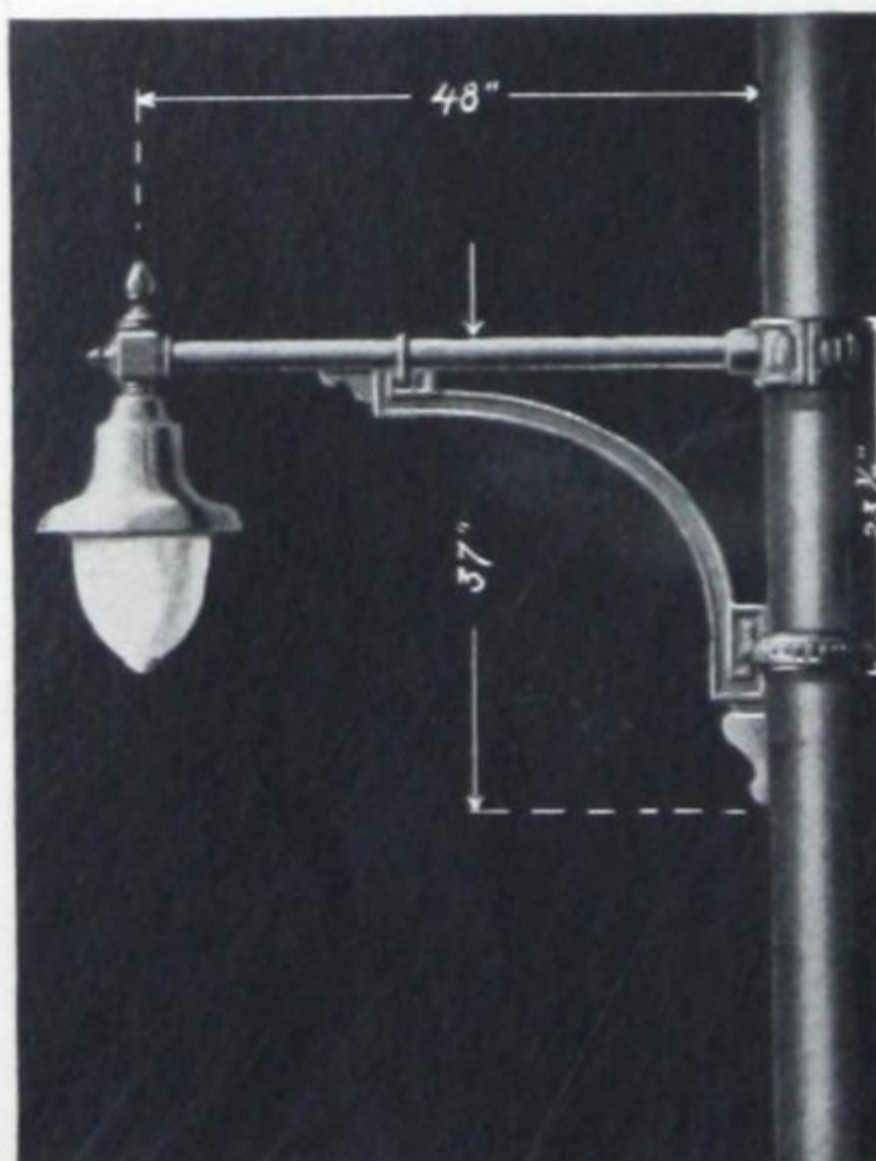


Fig. 6
Design No. 5563
Wood-pole mounting design
No. 5564

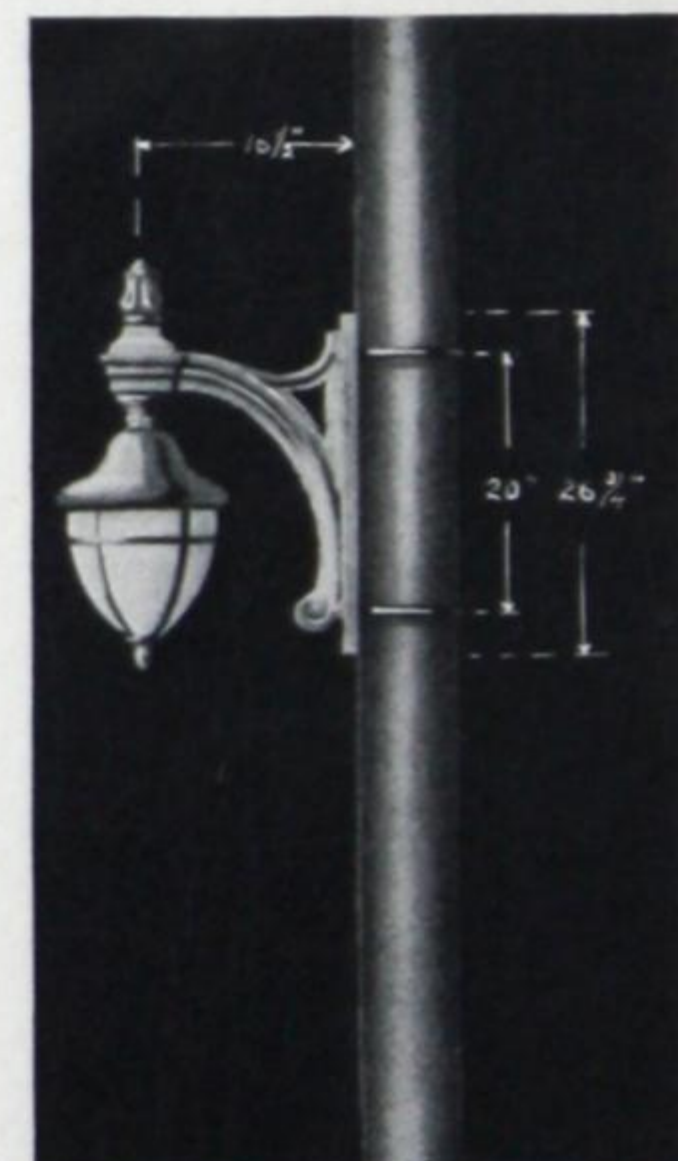


Fig. 7
Design No. 5565
Twin-light design No. 5566
Wood-pole mounting design
No. 5567

UNION METAL ORNAMENTAL BRACKETS

For Suspension Luminaires



Fig. 8
Form 52 G-E luminaire with
11-in. rippled bowl refractor



Fig. 9
Form 32 G-E luminaire
with No. 146 globe



Fig. 10
Form 19A G-E luminaire



Fig. 11
Form 25C G-E luminaire
with No. 193 globe

DESIGN NUMBER		POLE DIAMETER (Outside) in Inches			RECOMMENDED FORMS G-E SUSPENSION LUMINAIRES	APPROX. SHIP. WEIGHT in Lb	LIST PRICE Class GO-51	DESIGN NUMBER		POLE DIAMETER (Outside) in Inches			RECOMMENDED FORMS G-E SUSPENSION LUMINAIRES	APPROX. SHIP. WEIGHT in Lb	LIST PRICE Class GO-51
Single Light	Twin Light	Avg	Min	Max				Single Light	Twin Light	Avg	Min	Max			
4561X5 4561X6 4561X7	4560X5 4560X6 4560X7	5 6 7	4 7/16 5 5/16 6 5/16	5 7/16 6 1/2 7 13/16	19A, 19B, 25C, 25D, 32, 32B, 52		\$38.00 38.80 39.60 73.00 74.60 76.20	5557		wood pole mounting					\$22.00
		5 6 7	4 7/16 5 5/16 6 5/16	5 7/16 6 1/2 7 13/16				5555X5 5555X6 5555X7	5556X5 5556X6 5556X7	5 6 7	4 7/16 5 5/16 6 5/16	5 7/16 6 1/2 7 13/16	19A, 25A, 25B, 25C, 25D, 45L, 47, 52		27.00 27.80 28.60 51.00 52.60 54.20
2555		wood pole mounting					22.00	5564		wood pole mounting					22.00
2554X5 2554X6 2554X7	5677X5 5677X6 5677X7	5 6 7	4 7/16 5 5/16 6 5/16	5 7/16 6 1/2 7 13/16	19A, 25A, 25B, 25C, 25D, 45L, 47, 52		27.00 27.80 28.60 51.00 52.60 54.20	5563X5 5563X6 5563X7		5 6 7	4 7/16 5 5/16 6 5/16	5 7/16 6 1/2 7 13/16	25A, 25B, 25C, 25D, 32, 45L, 47, 52		27.00 27.80 28.60
5559		wood pole mounting					27.50	5567		wood pole mounting					16.50
4587X5 4587X6 4587X7	4588X5 4588X6 4588X7	5 6 7	4 7/16 5 5/16 6 5/16	5 7/16 6 1/2 7 13/16	19A, 19B, 25B, 25C, 25D, 32, 52		32.50 33.30 34.10	5565X5 5565X6 5565X7	5566X5 5566X6 5566X7	5 6 7	4 7/16 5 5/16 6 5/16	5 7/16 6 1/2 7 13/16	25A, 25B, 25C, 25D, 45L, 47, 52		21.50 22.30 23.10 40.00 41.60 43.20

When ordering brackets, mention Form number of G-E luminaire to be used and pole outside diameter (except wood poles) at point of bracket mounting.

Design numbers and prices do not include luminaires or MAZDA Lamps.

Brackets are available for mounting on other diameters of monotube or tubular steel poles than those listed and for mounting on fluted steel poles. Apply nearest sales office.

Dimensions are for reference only. For exact dimensions refer to nearest sales office.

UNION METAL ORNAMENTAL BRACKETS

For Upright Ornamental Luminaires



Fig. 12
Design No. 4565
Twin-light design No. 4564

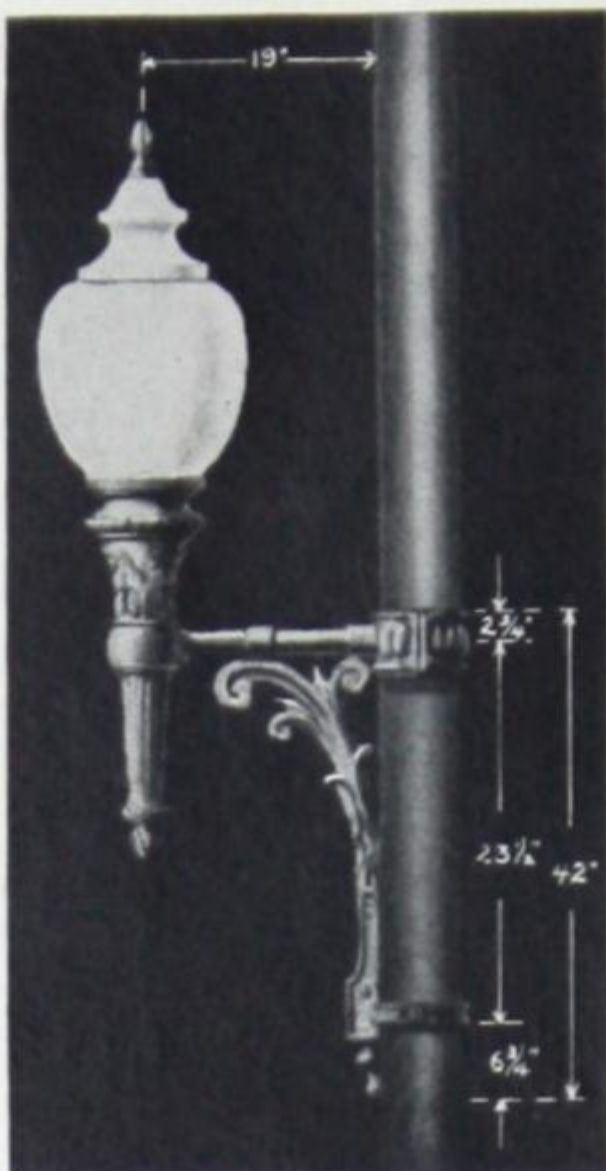


Fig. 13
Design No. 5571
Twin-light design No. 5572
Wood-pole mounting design No. 5569
For Form 9 G-E luminaires
Design No. 5573
Twin-light design No. 5574
Wood-pole mounting design No. 5570

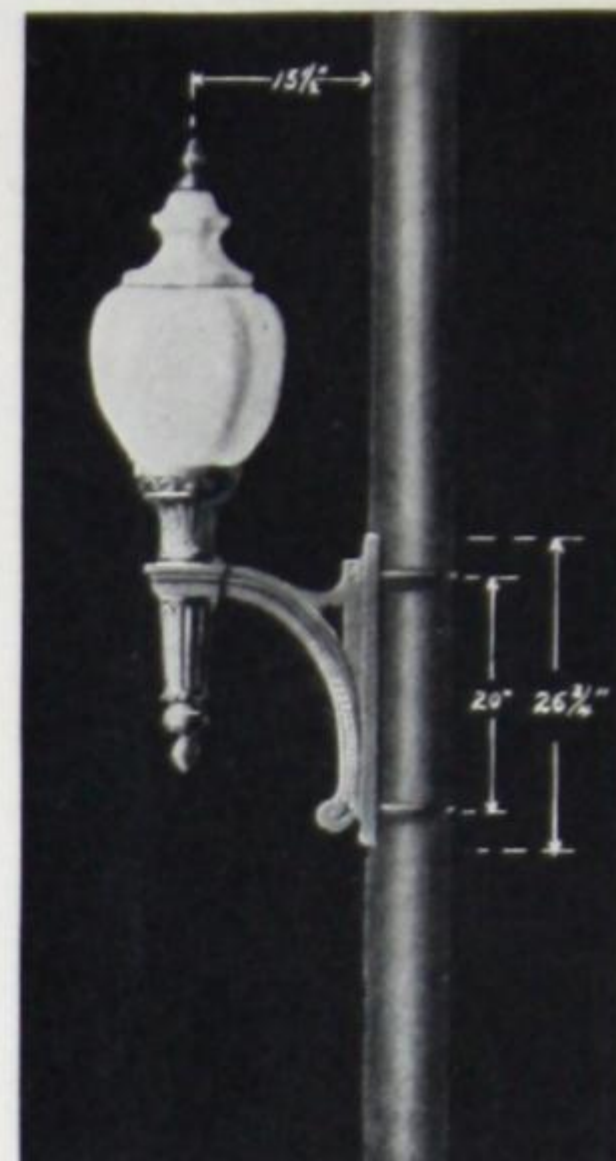


Fig. 14
Design No. 2607
Twin-light design No. 2608
Wood-pole mounting design No. 2612

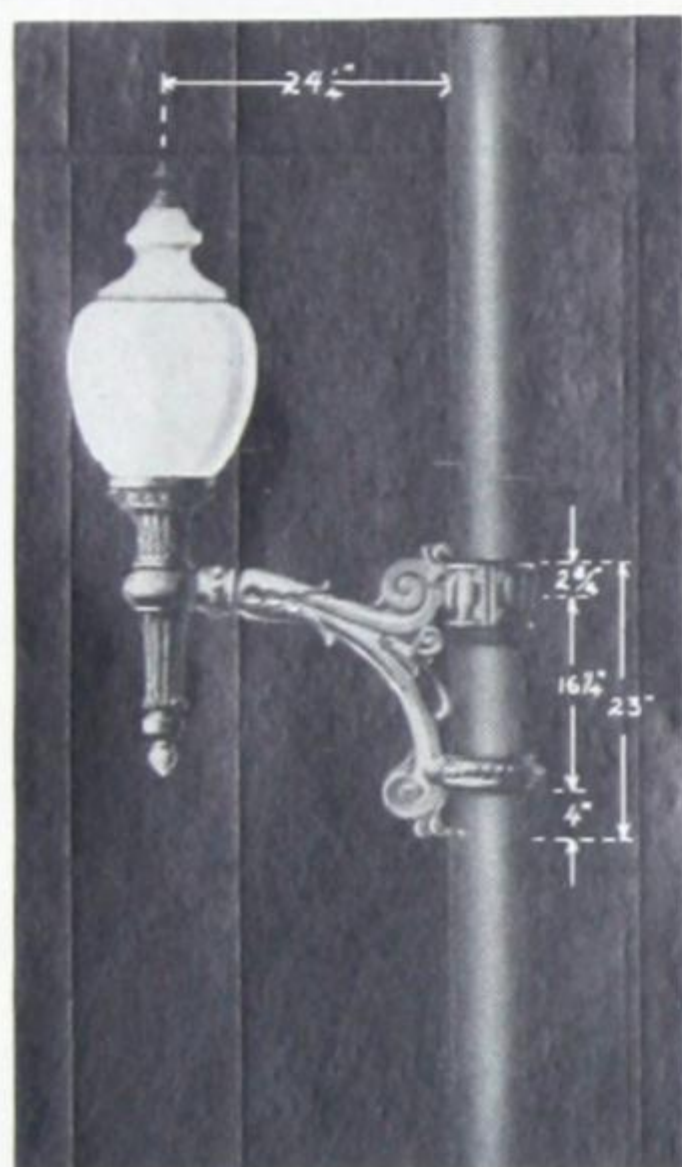


Fig. 15 (Left)
Design No. 2603
Twin-light design No. 2604
Wood-pole mounting design
No. 2611

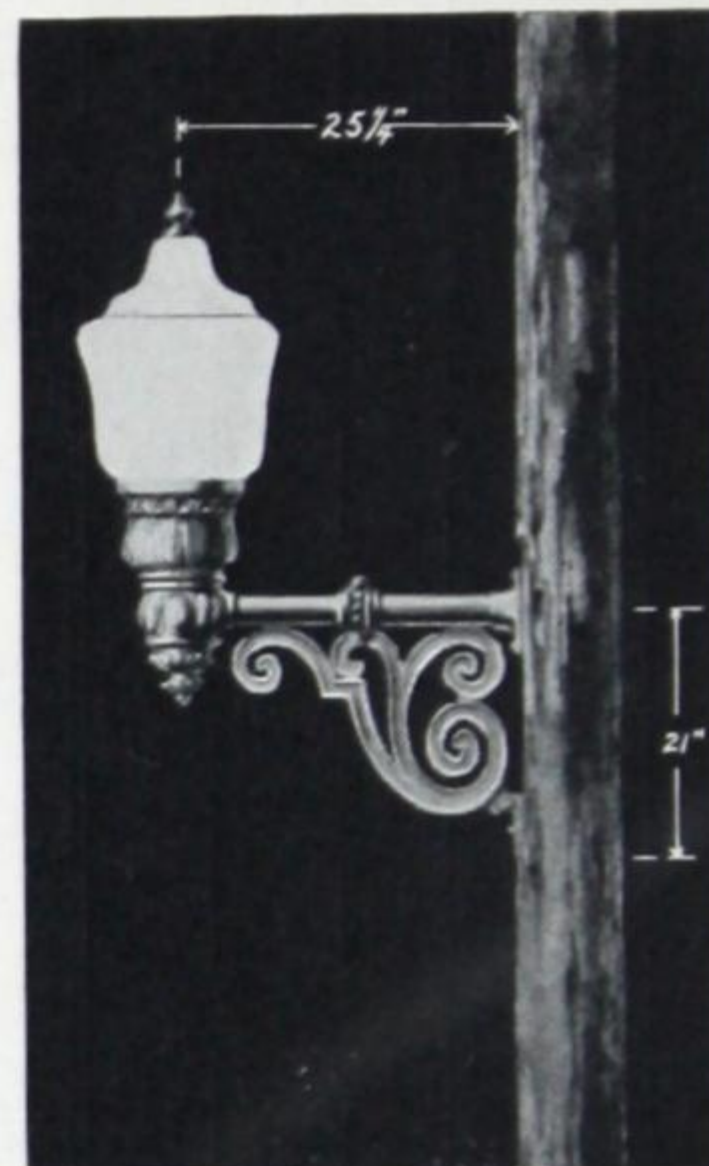


Fig. 16 (Right)
Design No. 5639
Steel-pole mounting design No. 5637
Twin-light steel-pole mounting
Design No. 5638
For Forms 8 and 12 G-E luminaires
Design No. 5631
Steel-pole mounting design No. 5629
Twin-light Steel-pole mounting
Design No. 5630

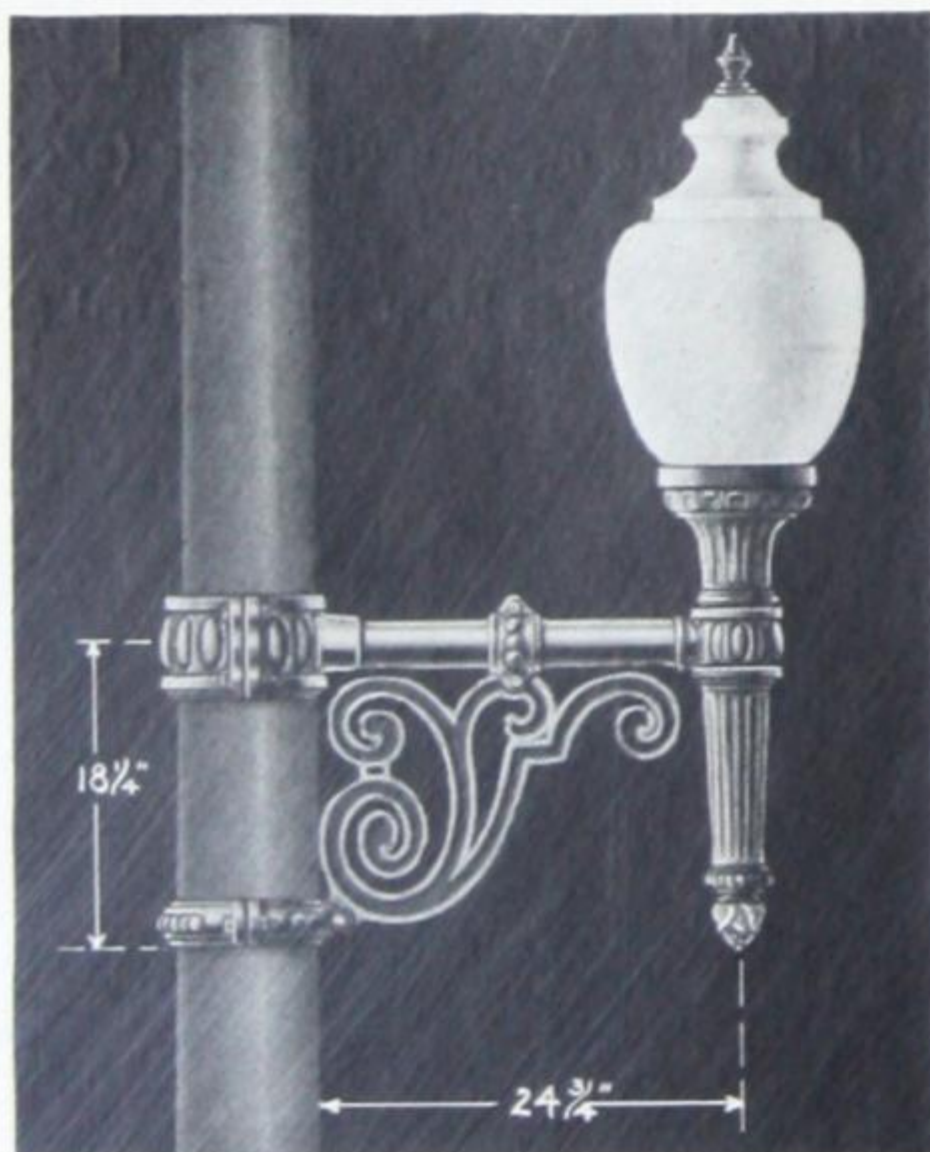


Fig. 17
Design No. 5613
Twin-light design No. 5614
Wood-pole mounting design No. 5615

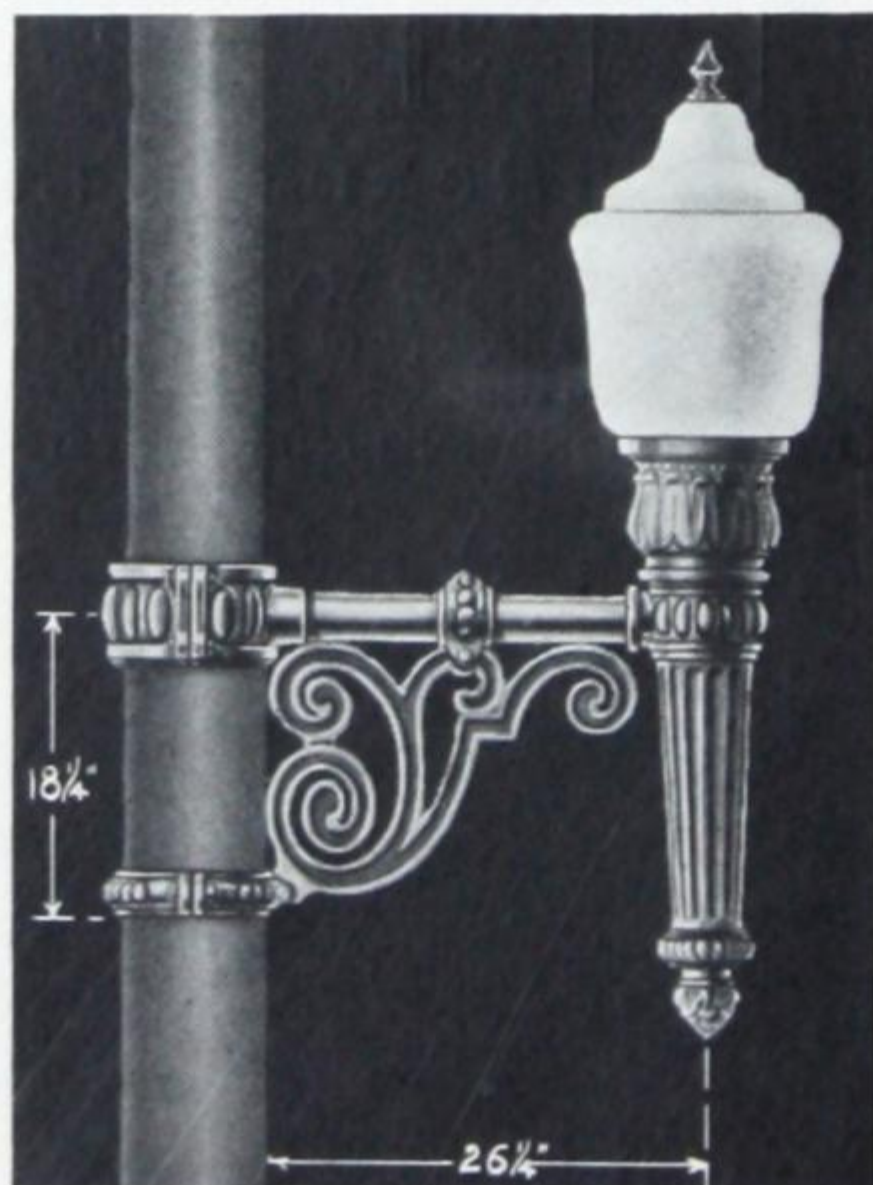


Fig. 18
Design No. 5621
Twin-light design No. 5622
Wood-pole mounting design No. 5623



Fig. 19
Design No. 5605
Twin-light design No. 5606
Wood-pole mounting design
No. 5607

UNION METAL ORNAMENTAL BRACKETS For Upright Ornamental Luminaires



Fig. 20
Form 8 G-E luminaire,
F casing, No. 127-1127
glassware



Fig. 21
Form 9 G-E luminaire,
E casing, No. 107-1107
glassware



Fig. 22
Form 12 G-E luminaire,
M casing, No. 124-1124
glassware, ornamental
ribs



Fig. 23
Form 27 G-E luminaire,
No. 21 casing, 118-1118
glassware



Fig. 24
Form 18A, G-E luminaire,
S casing

FORM NO. OF G-E LUMINAIRES AND CASINGS RECOMMENDED

WITH UNION METAL DESIGN NO.

4565 4564		5569 5571 5572		5570 5573 5574		2612 2607 2608		2611 2603 2604		5607 5605 5606		5615 5613 5614		5623 5621 5622		5631 5629 5630		5639 5637 5638	
FORM	CASING	FORM	CASING	FORM	CASING	FORM	CASING	FORM	CASING	FORM	CASING	FORM	CASING	FORM	CASING	FORM	CASING	FORM	CASING
9 12	E M, N, O, 19	8 12	F, 3 M, N, O, 19	9 E		8 12	F, 3 M, N, O	8 12	F, 13 M, N, O	8 12	F, 13 M, N, O	8 12	F, 13 M, N, O	9 E		8 12	F, 13 M, N, O	9 E	
18B 38	R	13 16	J, 13 Q			13 16	J, 13 Q	13 16	J, 13 Q	13 16	J, 13 Q	13 16	J, 13 Q			13 16	J, 13 Q		
		18A 18B	S R			18A 18B	S R	18A 18B	S R	18A 18B	S R	18A 18B	S R			18A 18B	S R		
		38	R																

DESIGN NUMBER		POLE DIAMETER (Outside) in Inches			APPROX SHIP. WEIGHT in Lb	LIST PRICE Class GO-51	DESIGN NUMBER		POLE DIAMETER (Outside) in Inches			APPROX SHIP. WEIGHT in Lb	LIST PRICE Class GO-51
Single Light	Twin Light	Average	Min	Max			Single Light	Twin Light	Average	Min	Max		
4565X5 4565X6 4565X7		5 6 7	4 7/16 5 5/16 6 5/16	5 7/16 6 1/2 7 13/16		\$72.50 73.30 74.10	5607 5605X5 5605X6 5605X7		wood-pole mounting 5 6 7	4 7/16 5 5/16 6 5/16	5 7/16 6 1/2 7 13/16		\$22.00 27.00 27.80 28.60
	4564X5 4564X6 4564X7	5 6 7	4 7/16 5 5/16 6 5/16	5 7/16 6 1/2 7 13/16		142.00 143.60 145.20		5606X5 5606X6 5606X7	5 6 7	4 7/16 5 5/16 6 5/16	5 7/16 6 1/2 7 13/16		51.00 52.60 54.20
5569 5570 5571X5 5571X6 5571X7		wood-pole mounting 5 6 7	4 7/16 5 5/16 6 5/16	5 7/16 6 1/2 7 13/16		27.50 27.50 32.50 33.30 34.10	5615 5613X5 5613X6 5613X7		wood-pole mounting 5 6 7	4 7/16 5 5/16 6 5/16	5 7/16 6 1/2 7 13/16		27.50 32.50 33.30 34.10
	5572X5 5572X6 5572X7	5 6 7	4 7/16 5 5/16 6 5/16	5 7/16 6 1/2 7 13/16		62.00 63.60 65.20		5614X5 5614X6 5614X7	5 6 7	4 7/16 5 5/16 6 5/16	5 7/16 6 1/2 7 13/16		62.00 63.60 65.20
5573X5 5573X6 5573X7		5 6 7	4 7/16 5 5/16 6 5/16	5 7/16 6 1/2 7 13/16		38.00 38.80 39.60	5623 5621X5 5621X6 5621X7		wood-pole mounting 5 6 7	4 7/16 5 5/16 6 5/16	5 7/16 6 1/2 7 13/16		33.00 38.00 38.80 39.60
	5574X5 5574X6 5574X7	5 6 7	4 7/16 5 5/16 6 5/16	5 7/16 6 1/2 7 13/16		73.00 74.60 76.20		5622X5 5622X6 5622X7	5 6 7	4 7/16 5 5/16 6 5/16	5 7/16 6 1/2 7 13/16		73.00 74.60 76.20
2612 2607X5 2607X6 2607X7		wood-pole mounting 5 6 7	4 7/16 5 5/16 6 5/16	5 7/16 6 1/2 7 13/16		16.50 21.50 22.30 23.10	5631 5639 5629X5 5629X6 5629X7		wood-pole mounting wood-pole mounting 5 6 7	4 7/16 5 5/16 6 5/16	5 7/16 6 1/2 7 13/16		22.00 22.00 27.00 27.80 28.60
	2608X5 2608X6 2608X7	5 6 7	4 7/16 5 5/16 6 5/16	5 7/16 6 1/2 7 13/16		40.00 41.60 43.20		5630X5 5630X6 5630X7	5 6 7	4 7/16 5 5/16 6 5/16	5 7/16 6 1/2 7 13/16		51.00 52.60 54.20
2611 2603X5 2603X6 2603X7		wood-pole mounting 5 6 7	4 7/16 5 5/16 6 5/16	5 7/16 6 1/2 7 13/16		27.50 32.50 33.30 34.10	5637X5 5637X6 5637X7		wood-pole mounting wood-pole mounting 5 6 7	4 7/16 5 5/16 6 5/16	5 7/16 6 1/2 7 13/16		27.00 27.80 28.60
	2604X5 2604X6 2604X7	5 6 7	4 7/16 5 5/16 6 5/16	5 7/16 6 1/2 7 13/16		62.00 63.60 65.20		5638X5 5638X6 5638X7	5 6 7	4 7/16 5 5/16 6 5/16	5 7/16 6 1/2 7 13/16		51.00 52.60 54.20

When ordering brackets, mention Form number and casing of G-E luminaire to be used and pole outside diameter (except wood poles) at point of bracket mounting.

Design numbers and prices do not include luminaires or MAZDA Lamps.

Brackets are available for mounting on other diameters of Monotube or tubular steel poles than those listed and for mounting on fluted steel poles. Apply nearest sales office.

Dimensions are for reference only. For exact dimensions refer nearest sales office.

G-E NOVALUX ORNAMENTAL LUMINAIRES

LUMINAIRES WITH GLASS GLOBES

Luminaires available with various sizes and designs of glassware and with various casing sizes to fit all lighting standards.

All casings of best-grade gray cast iron, green painted, except Form 33 which is furnished in aluminum as standard. Other finishes and metals available on request.

Chased metal patterns used to insure fine detail.

Casings designed to harmonize with different architectural treatment of lighting standards.

Globe seat or ring integral with casing on Forms 8, 9, 13, 16, and 21 and separate on Form 12. The Form 33 consists of only a globe ring.

Drain holes drilled in globe rings.

Internal canopy holder fastened to upper lip of globe by set screws and is provided with swinging arm to hold canopy while cleaning or relamping, except as noted below.

The canopies for the Nos. 103, 123, and 124 globes are held by an internal support which fastens to the casing unless external ribs are supplied, in which case the canopy is held by four spring clips fastened to the ornamental band.

Adjustable refractor holder rests on canopy holder or when metal canopy is used, on top of globe.

Weather shield with pinnacle keeps water from entering canopy.

An internal reflector is used with larger metal canopies.

Forms 8, 9, 12, and 27 for use on fluted standards. Form 16 of same design as Form 13 except larger; for use on octagonal poles.

Pole-top dimensions of the Form 9 casing are such that it can be used on the same poles as ornamental arc lamps.

The Form 33 is for use on concrete poles; or poles with a casing.

Autotransformers can be used in the Forms 9, 12, and 16 casing. They are mounted on under side of porcelain insulating plate.

All units adaptable to bracket mounting.

FORM 17

Luminaire is one-piece cast-aluminum, natural finish.

Porcelain insulator same as Form 47; used as reflector.

Hood removable to facilitate wiring.

Removable handhole cover in bottom casting to facilitate wiring.

LANTERN LUMINAIRES

FORM 18A

Castings of best grade gray cast-iron from machine patterns. Other metals available on request.

Factory finish, one coat black baking japan.

Members fastened together with brass screws, nuts, and lock washers to protect against corrosion.

Canopy hinged for cleaning and relamping.

Fixture dustproof and without ventilation holes.

Refractor holder arranged to swing out at top to facilitate cleaning and relamping.

Lanterns shipped assembled less glass panels.

FORM 18B

Identical with Form 18A, except larger. Autotransformer can be used in casing.

FORM 19A

Same as Form 18A, except arranged for suspension mounting on 1 1/4-in. pipe.

Bottom is hinged grid casting to facilitate cleaning and relamping. Grid carries a flat round glass panel to provide light directly beneath the luminaire.

FORM 19B

Same as Form 19A, except larger.

FORM 33A

Same as Form 18A, except different design of casing.

FORM 33B

Same as Form 18B, except different design of casing.

FORM 38

Castings of natural-finish aluminum from machine patterns. Available in brass on request.

Lantern hinged in center so that half of lantern body opens for cleaning and relamping.

Canopy hinged. In closed position overlaps lantern body, holding hinged section firmly in place.

Internal reflector and refractor holder combined furnished with all luminaires.

FORM 56

Castings of natural-finish aluminum from machine patterns. Other metals available on request.

Canopy hinged to facilitate cleaning and relamping.

Stop provided on canopy to prevent its swinging open too far and breaking the panels.

Panels slide into grooves from the top without necessity of fastening with spring clips. Panels easily replaceable.

Lantern furnished as standard without spurs and with glass canopy.

Lantern available with or without spurs and with glass or metal canopy.

For prices see pages 91-94 incl; for dimensions see pages 83-90 incl.

G-E NOVALUX ORNAMENTAL LUMINAIRES FORM 8

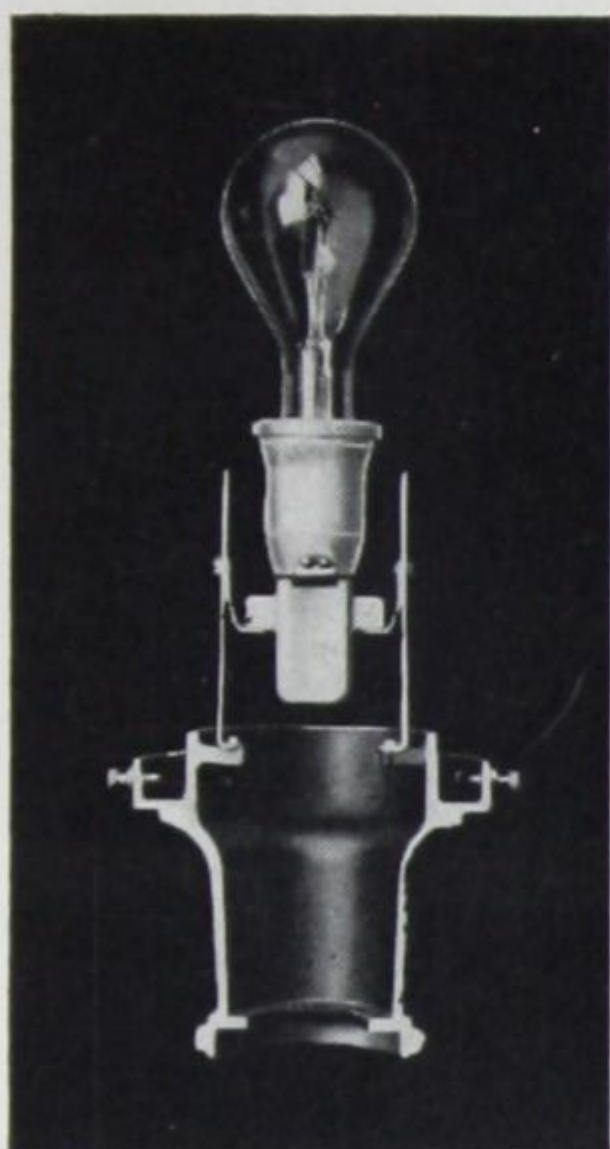


Fig. 1
(Photograph 720912)
Cross section with Form F casing showing series socket and receptacle



Fig. 2
(Photograph 276070)
Cross-section of globe and canopy showing internal canopy and refractor holder
(Same method of support is used on other luminaires except with No. 103, 123, and 124 Globes)



Fig. 3
(Photograph 269990)
Luminaire with No. 109 alabaster rippled globe and No. 1109 alabaster rippled glass canopy

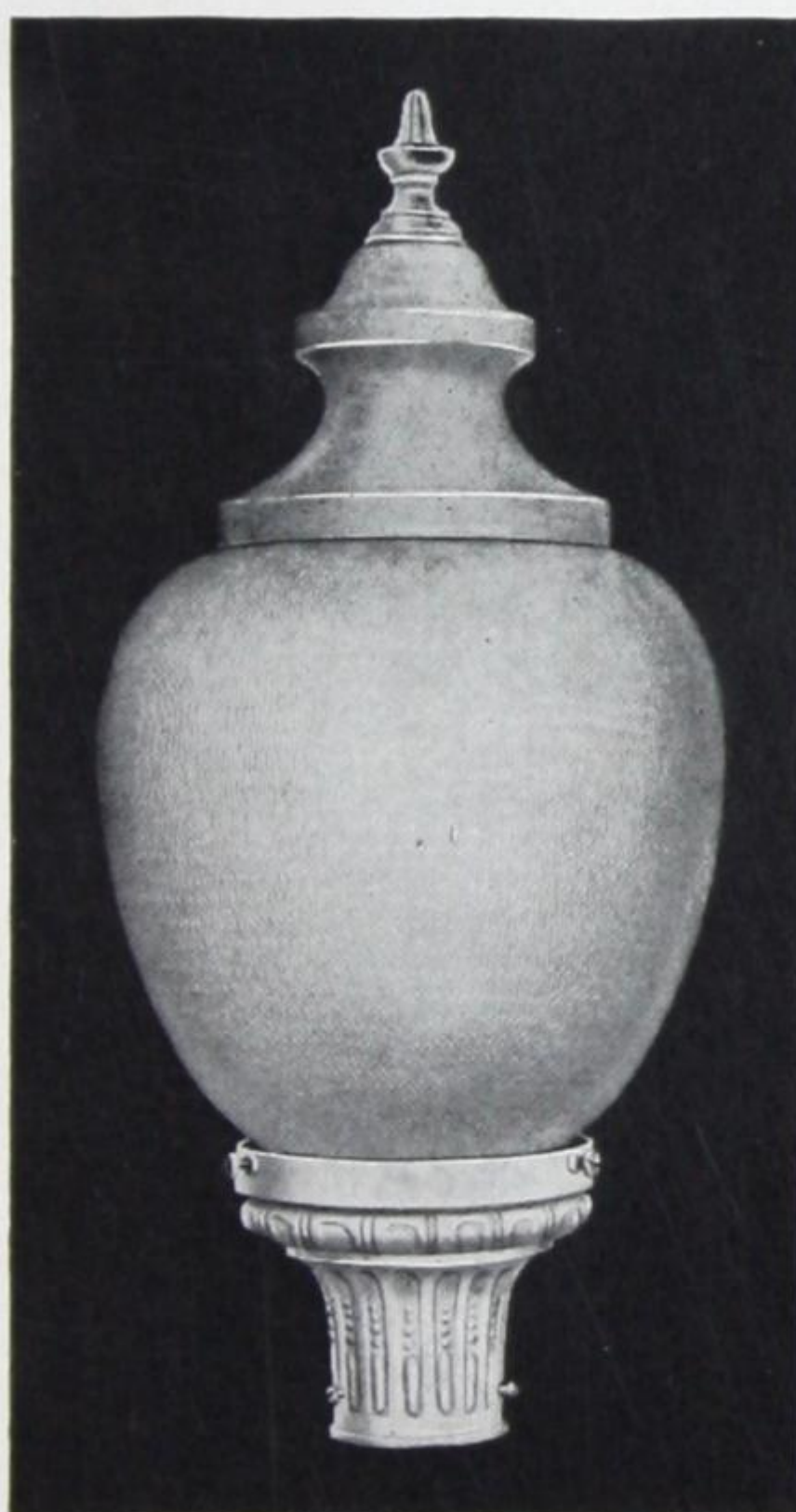


Fig. 4
(Photograph 274600)
Luminaire with No. 127 alabaster rippled globe and No. 1127 alabaster rippled glass canopy
No. 128 globe and No. 1128 canopy same shape except smaller, see Photograph 274602

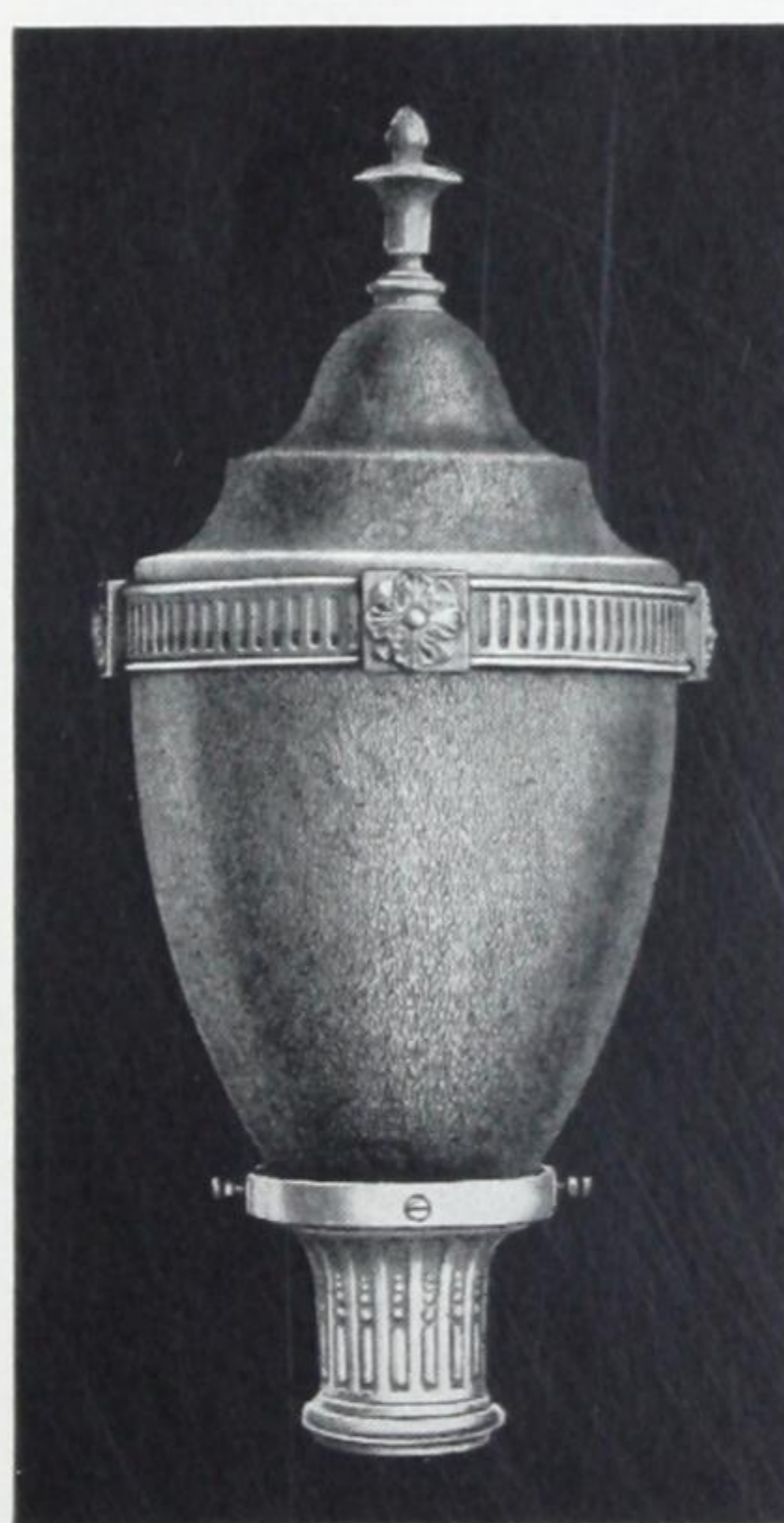


Fig. 5
(Photograph 271348)
Luminaire with No. 123 alabaster rippled globe and No. 1123 alabaster rippled glass canopy

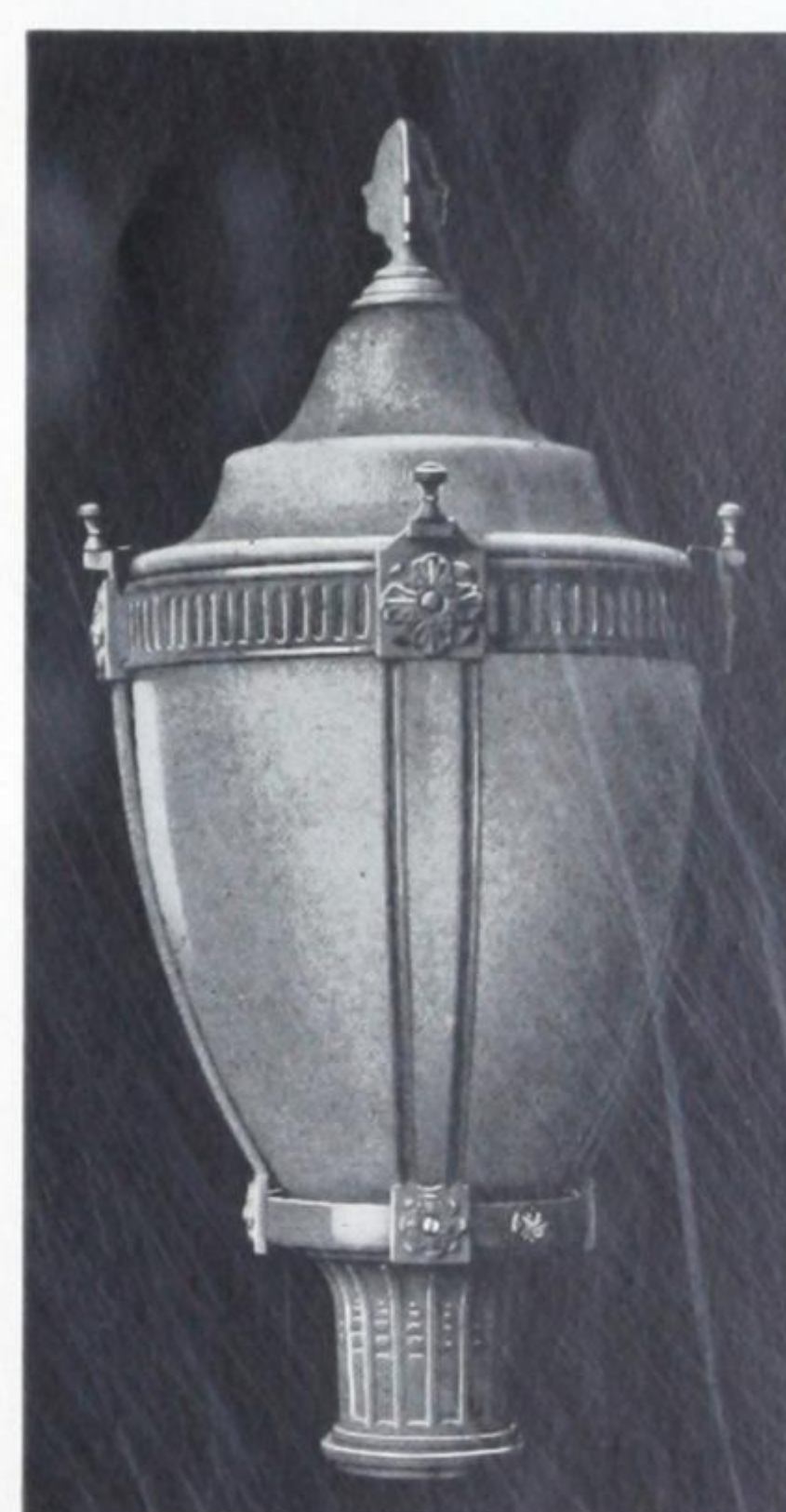


Fig. 6
(Photograph 281129)
Luminaire with No. 123 alabaster rippled globe and No. 1123 alabaster rippled glass canopy and external straps

G-E NOVALUX ORNAMENTAL LUMINAIRES

FORM 9



Fig. 7 (Left)
(Photograph 269991)
Luminaire with No. 107 alabaster rippled
globe and No. 1107 alabaster rippled
canopy



Fig. 8 (Right)
(Photograph 272915)
Luminaire with No. 118 alabaster rippled globe
and No. 1118 alabaster rippled canopy

FORM 12



Fig. 9
(Photograph 281662)
Luminaire with No. 161 alabaster
rippled globe and No. 1118
alabaster rippled canopy



Fig. 10
(Photograph 276680)
Cross section of luminaire with No. 124 globe
and No. 1124 canopy with refractor showing
internal support and canopy holder



Fig. 11
(Photograph 280585)
Luminaire with No. 124 alabaster rippled
globe, No. 1124 alabaster rippled
canopy, and external ribs

G-E NOVALUX ORNAMENTAL LUMINAIRES

FORM 12 (Cont)



Fig. 12

(Photograph 276595)

Luminaire with No. 126 alabaster rippled globe,
No. 1126 alabaster rippled canopy,
and Form 19 casing



Fig. 13

(Photograph 271347)

Luminaire with No. 123 alabaster rippled globe
No. 1123 alabaster rippled glass canopy
No. 124 globe and No. 1124 canopy, same shape
except larger, see Photograph 272854



Fig. 14

(Photograph 272676)

Luminaire with No. 118 alabaster rippled globe
and No. 1118 alabaster rippled
glass canopy
No. 127 globe and No. 1127 canopy, same shape
except smaller, see Photograph 274595

G-E NOVALUX ORNAMENTAL LUMINAIRES

FORM 13



Fig. 15 (Left)
(Photograph 272361)
Luminaire with No. 109 alabaster rippled
globe and No. 1109 alabaster rippled
canopy



Fig. 16 (Right)
(Photograph 274588)
Luminaire with No. 127 alabaster rippled
globe and No. 1127 alabaster rippled
canopy

FORM 16



Fig. 17 (Left)
(Photograph 271349)
Luminaire with No. 118 alabaster rippled
globe and No. 1118 alabaster
rippled glass canopy



Fig. 18 (Right)
(Photograph 271142)
Luminaire with No. 107 alabaster rippled
globe and metal canopy

G-E NOVALUX ORNAMENTAL LUMINAIRES

FORM 17



Fig. 19 (Left)
(Photograph 720886)
Form 17 luminaire with reflector only



Fig. 20 (Right)
(Photograph 721064)
Form 17 luminaire with No. 166 alabaster
rippled globe

FORMS 18A, 18B, 19A, AND 19B



Fig. 21 (Left)
(Photograph 421563)
Forms 18A and 18B luminaire



Fig. 22 (Right)
(Photograph 421562)
Forms 19A and 19B luminaire

G-E NOVALUX ORNAMENTAL LUMINAIRES

FORM 27

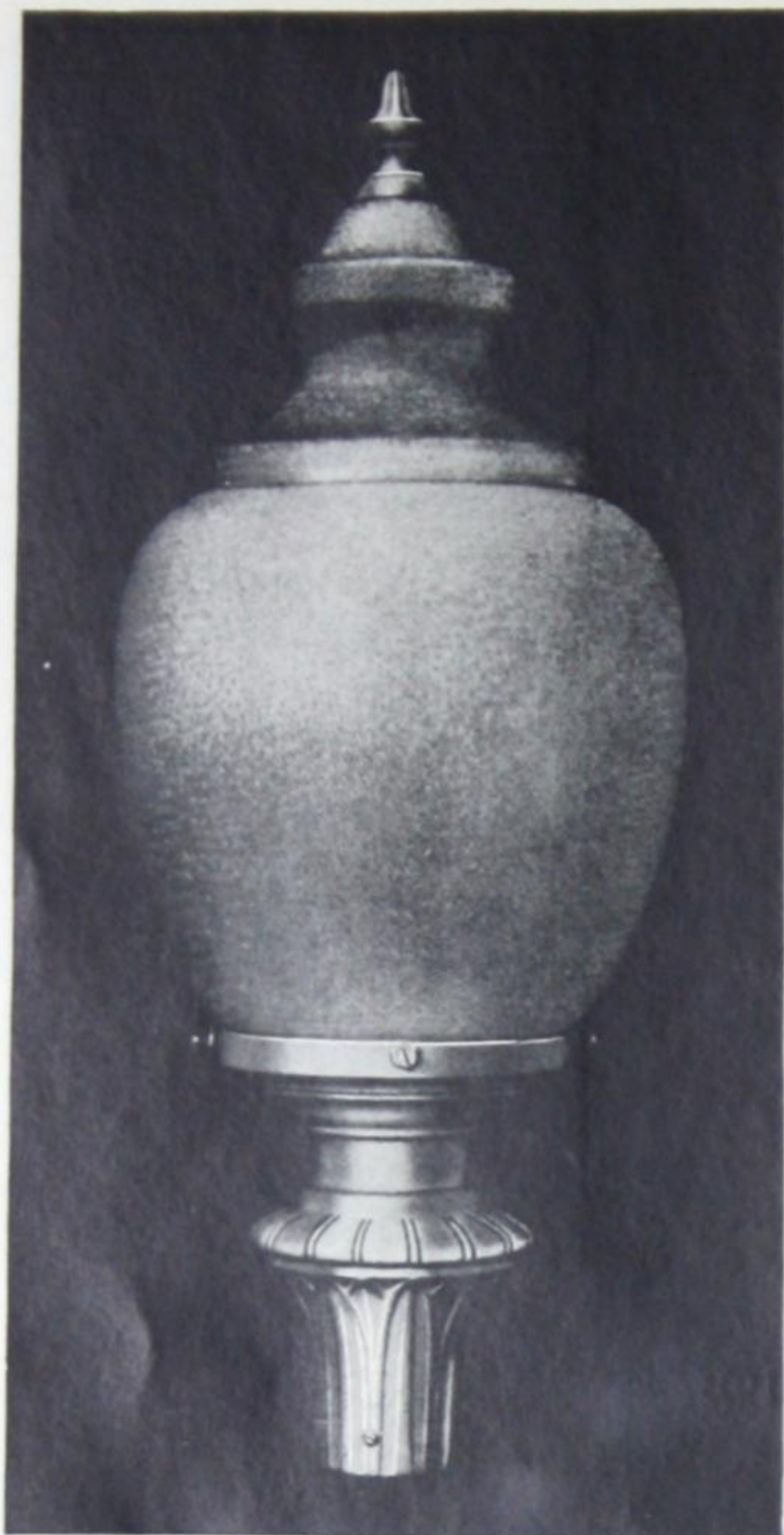


Fig. 23 (Left)
(Photograph 273724)
Luminaire with No. 118 alabaster
rippled globe and No. 1118
alabaster rippled canopy



Fig. 24 (Right)
(Photograph 278105)
Cross section of globe and canopy
showing internal canopy and
refractor holder

FORM 33



Fig. 25 (Left)
(Photograph 721591)
Luminaire with No. 109 ala-
baster rippled globe and No.
1109 alabaster rippled canopy
No. 107 globe and No. 1107
canopy same shape except
larger, see photograph
721572

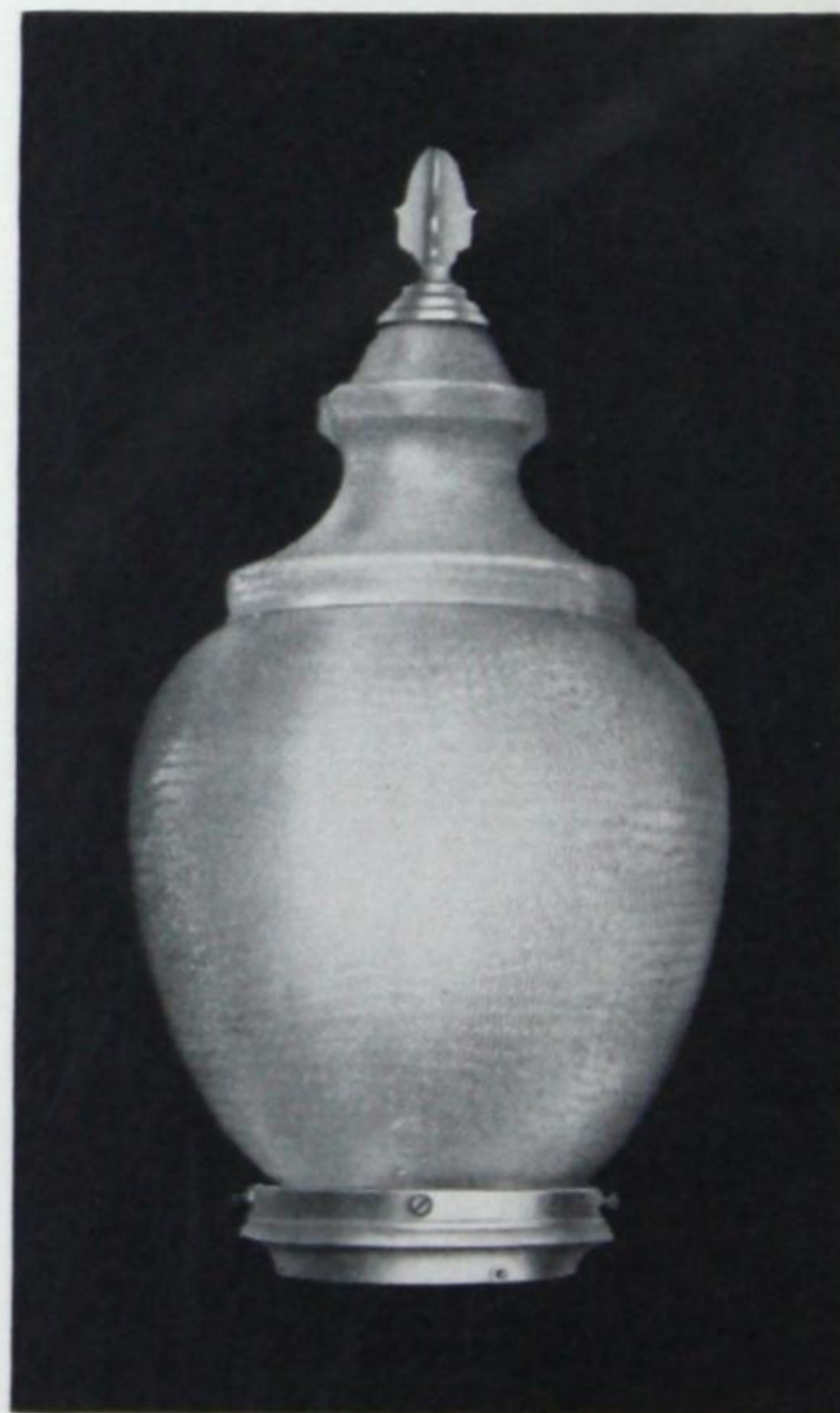


Fig. 26 (Right)
(Photograph 721589)
Luminaire with No. 127 ala-
baster rippled globe and No.
1127 alabaster canopy
No. 128 globe and No. 1128
canopy same shape except
smaller, see Photograph
721592

G-E NOVALUX ORNAMENTAL LUMINAIRES

FORM 33

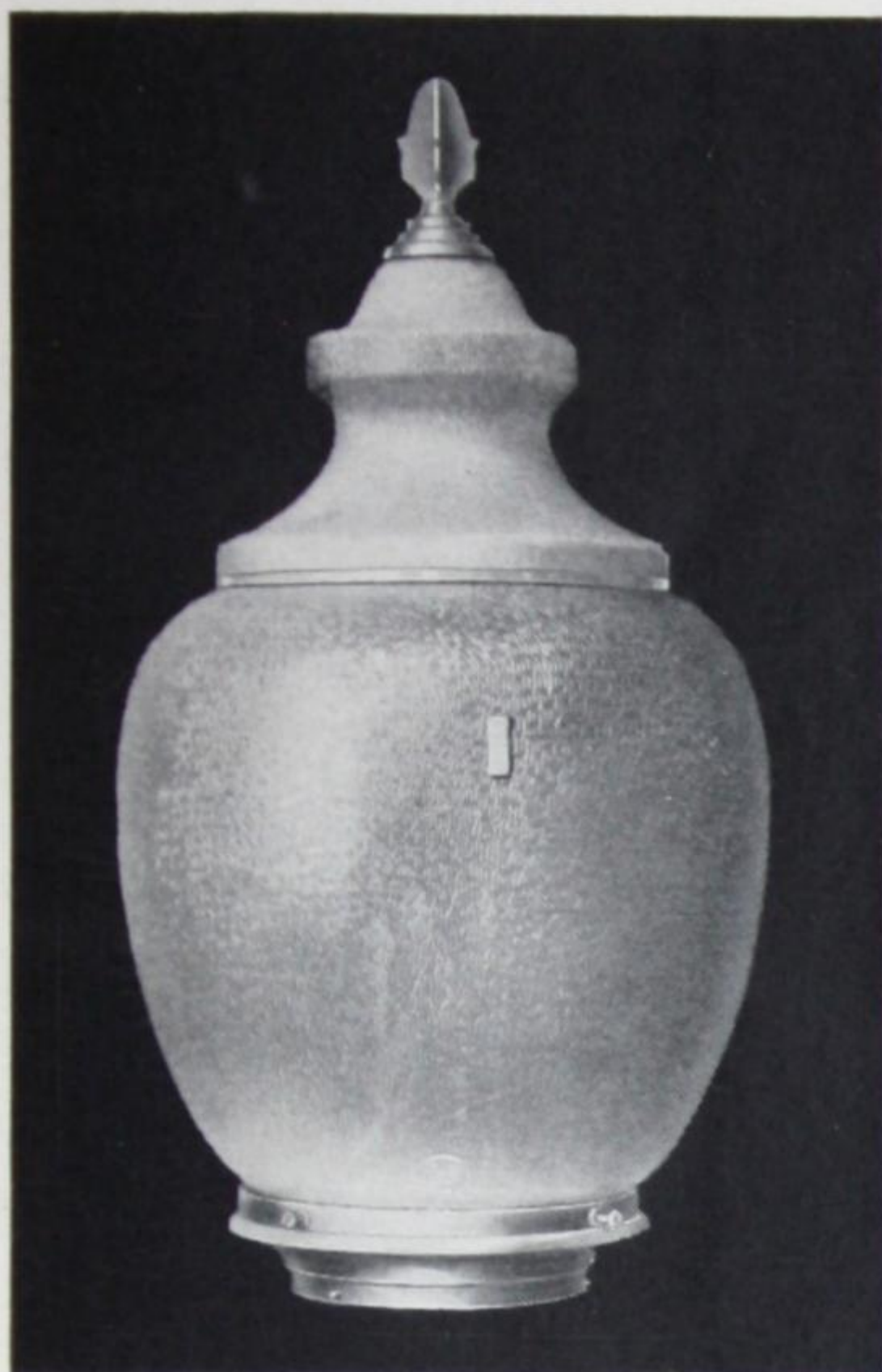


Fig. 27 (Left)
(Photograph 721574)
Luminaire with No. 118
alabaster rippled globe
and No. 1118 alabaster
rippled canopy

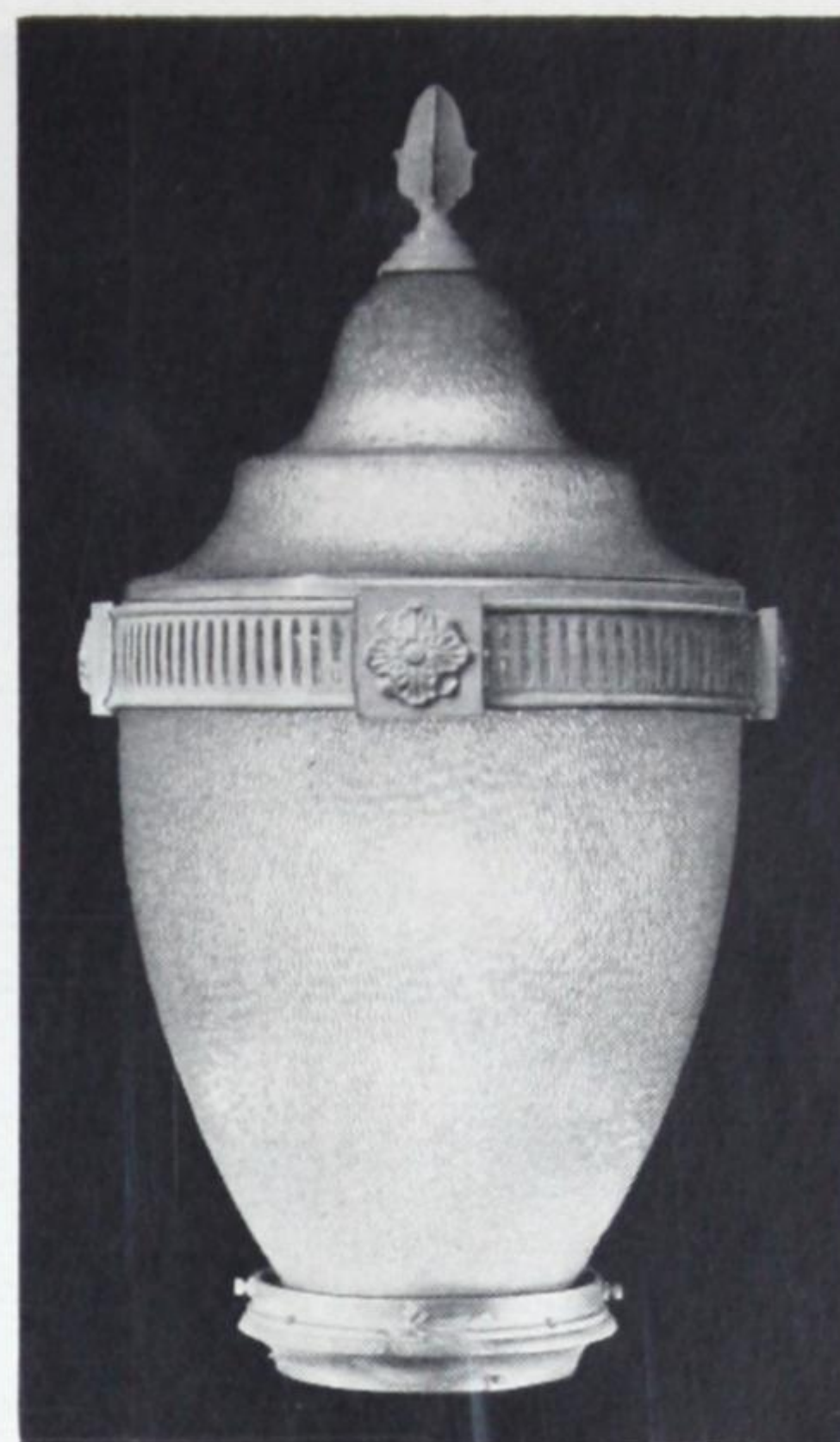


Fig. 28 (Right)
(Photograph 721687)
Luminaire with No. 124
alabaster rippled globe
and No. 1124 alabaster
rippled canopy
No. 123 Globe and No. 1123
canopy same shape except
smaller



Fig. 29
(Photograph 716498)
Forms 33A and 33B luminaire



Fig. 30
(Photograph 721590)
Luminaire with No. 124 alabaster rippled globe
and No. 1124 alabaster rippled canopy with
ornamental ribs
No. 123 globe and No. 1123 canopy same shape
except smaller

G-E NOVALUX ORNAMENTAL LUMINAIRES

FORM 38



Fig. 31
(Photograph 720290)
Form 38 luminaire

FORM 56



Fig. 32
(Photograph 720377)
Form 56 luminaire with glass canopy and spurs



Fig. 33
(Photograph 720762)
Form 56 luminaire with metal canopy

G-E NOVALUX ORNAMENTAL LUMINAIRES

DIMENSIONS—FORM 8

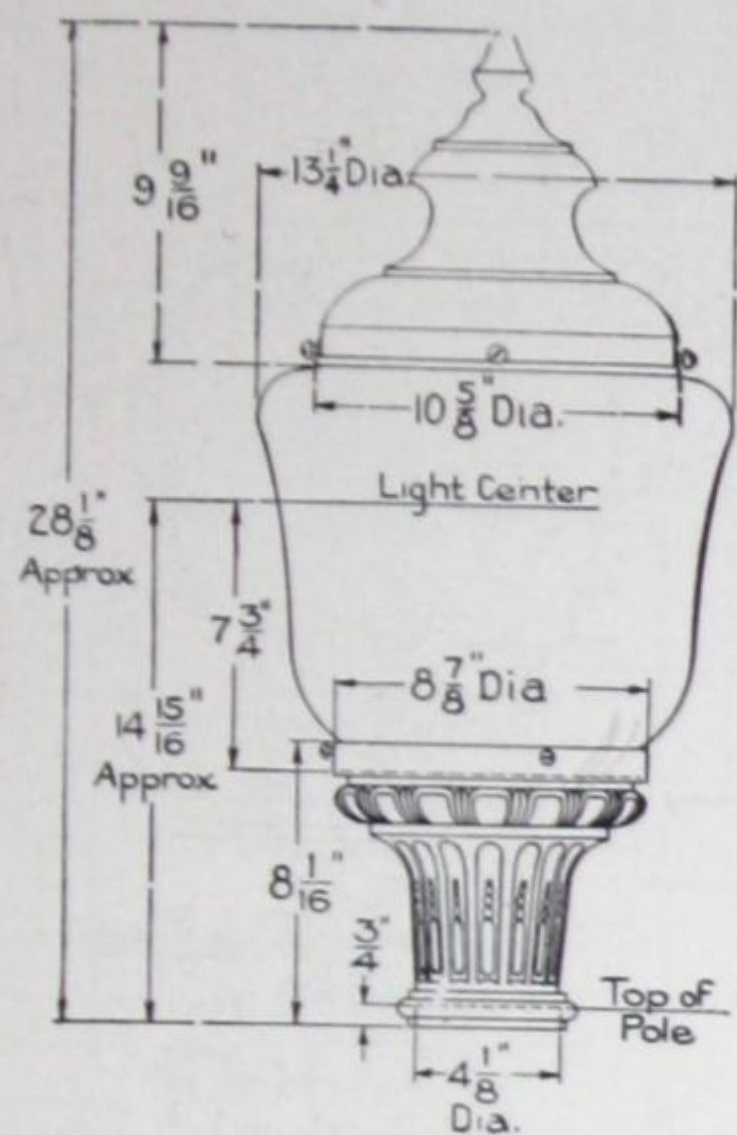


Fig. 1
(K-1222550)
Luminaire with Form F casing
No. 39 globe, and metal canopy

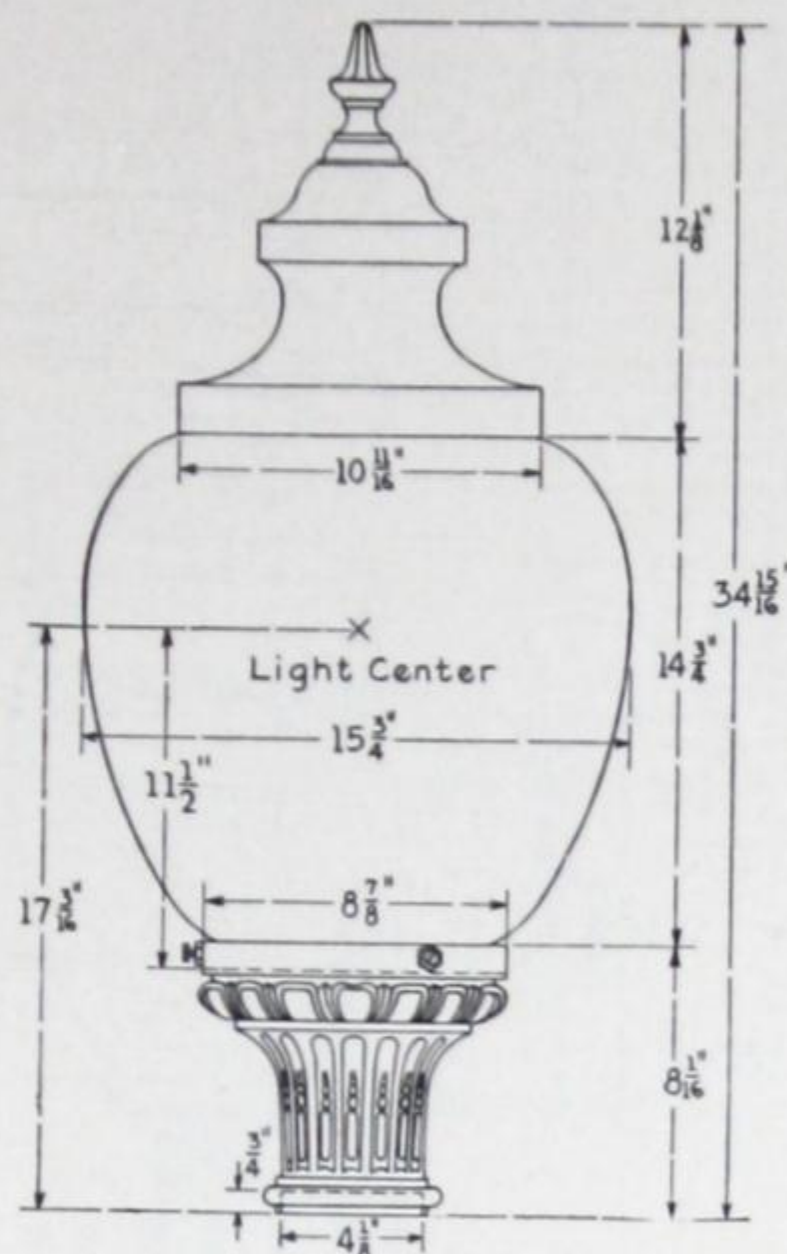


Fig. 2
(K-1272738)
Luminaire with Form F casing,
No. 127 globe, and No. 1127 canopy

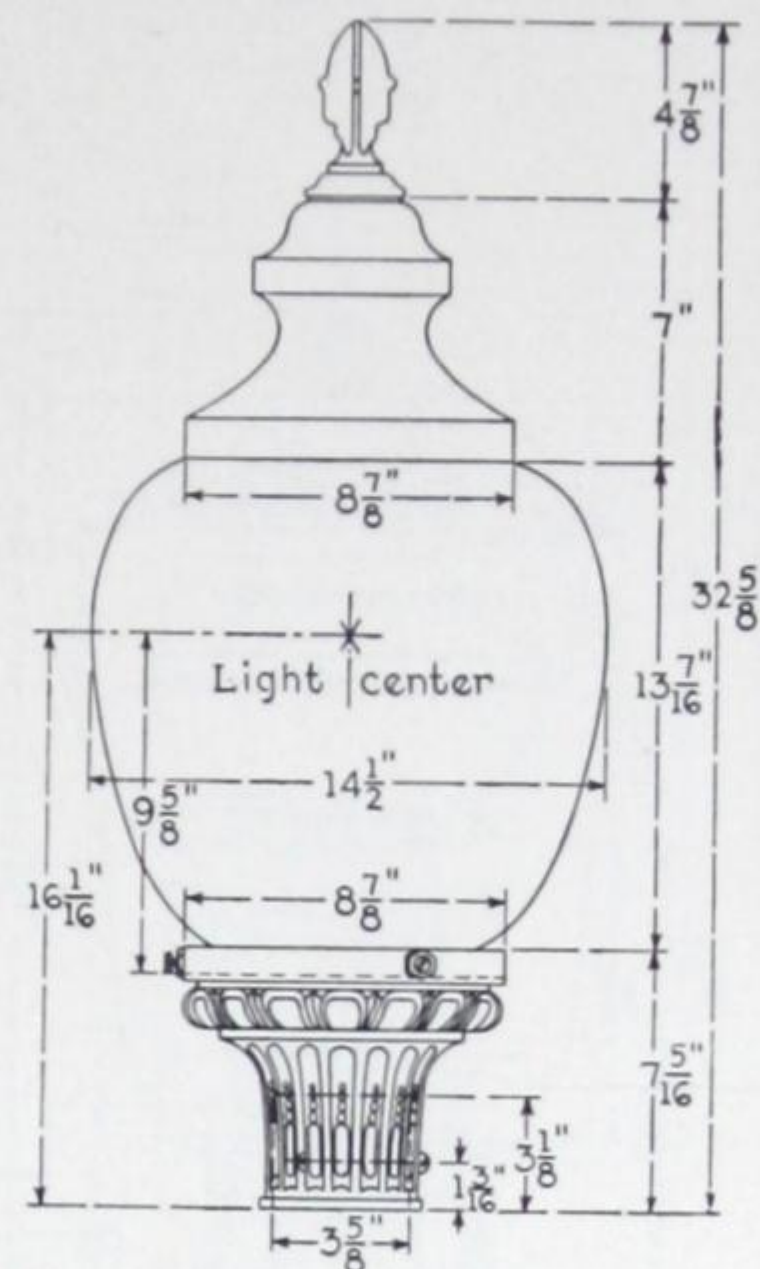


Fig. 3
(K-1272748)
Luminaire with Form K casing, No. 128
globe, and No. 1128 canopy

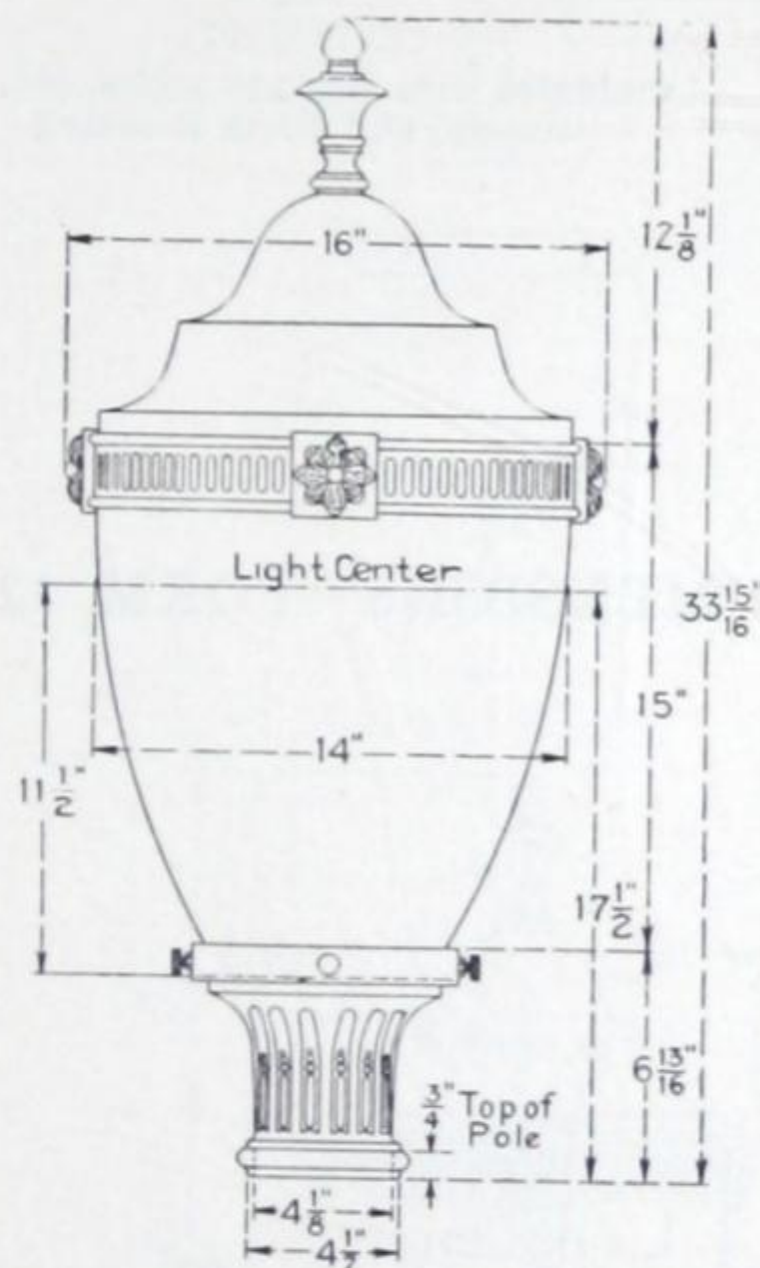


Fig. 4
(K-1227311)
Luminaire with Form 3 casing,
No. 103 globe, and No. 1103 or No. 1123 canopy

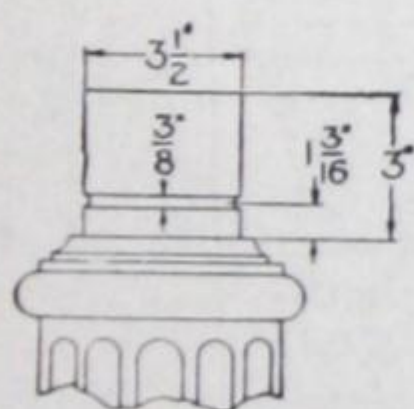


Fig. 5
Pole-top for Form K casing
and No. 2K casing

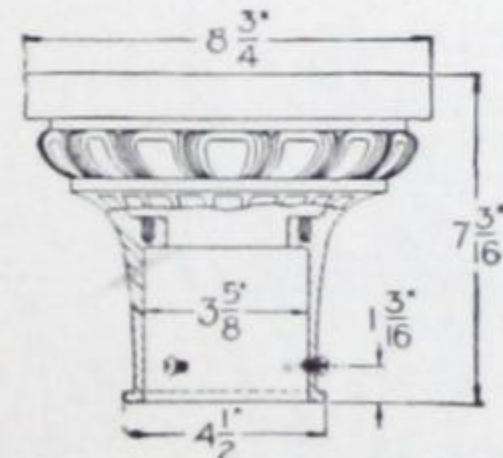


Fig. 6
Form K casing

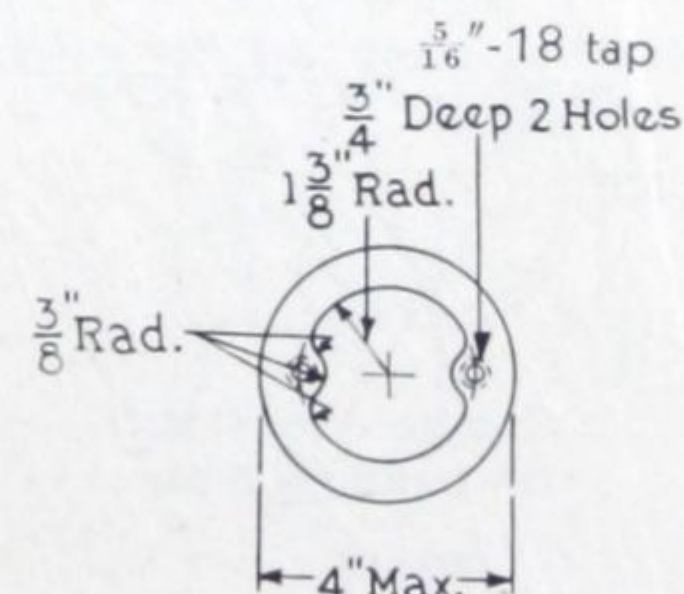


Fig. 7
Pole-top drilling for Form F casing
and No. 3 casing

G-E NOVALUX ORNAMENTAL LUMINAIRES

DIMENSIONS—FORM 9

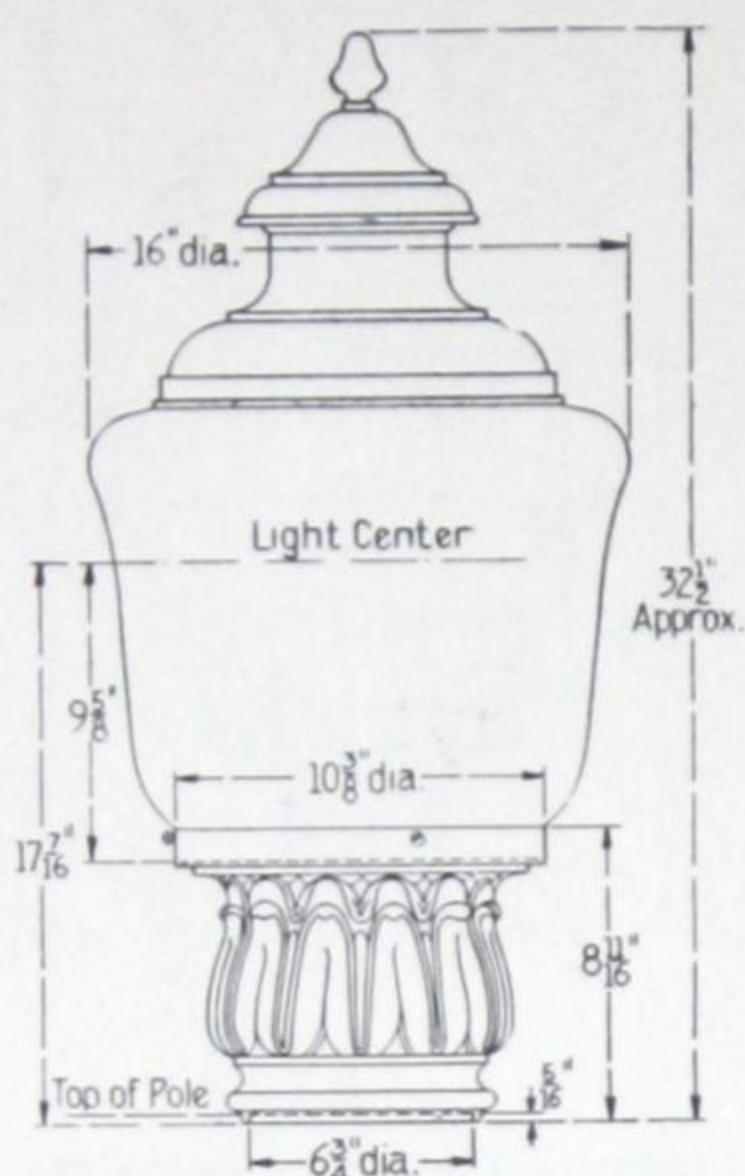


Fig. 8
(K-1227985)

Luminaire with No. 37 or No. 107 globe, metal canopy, and Form E casing

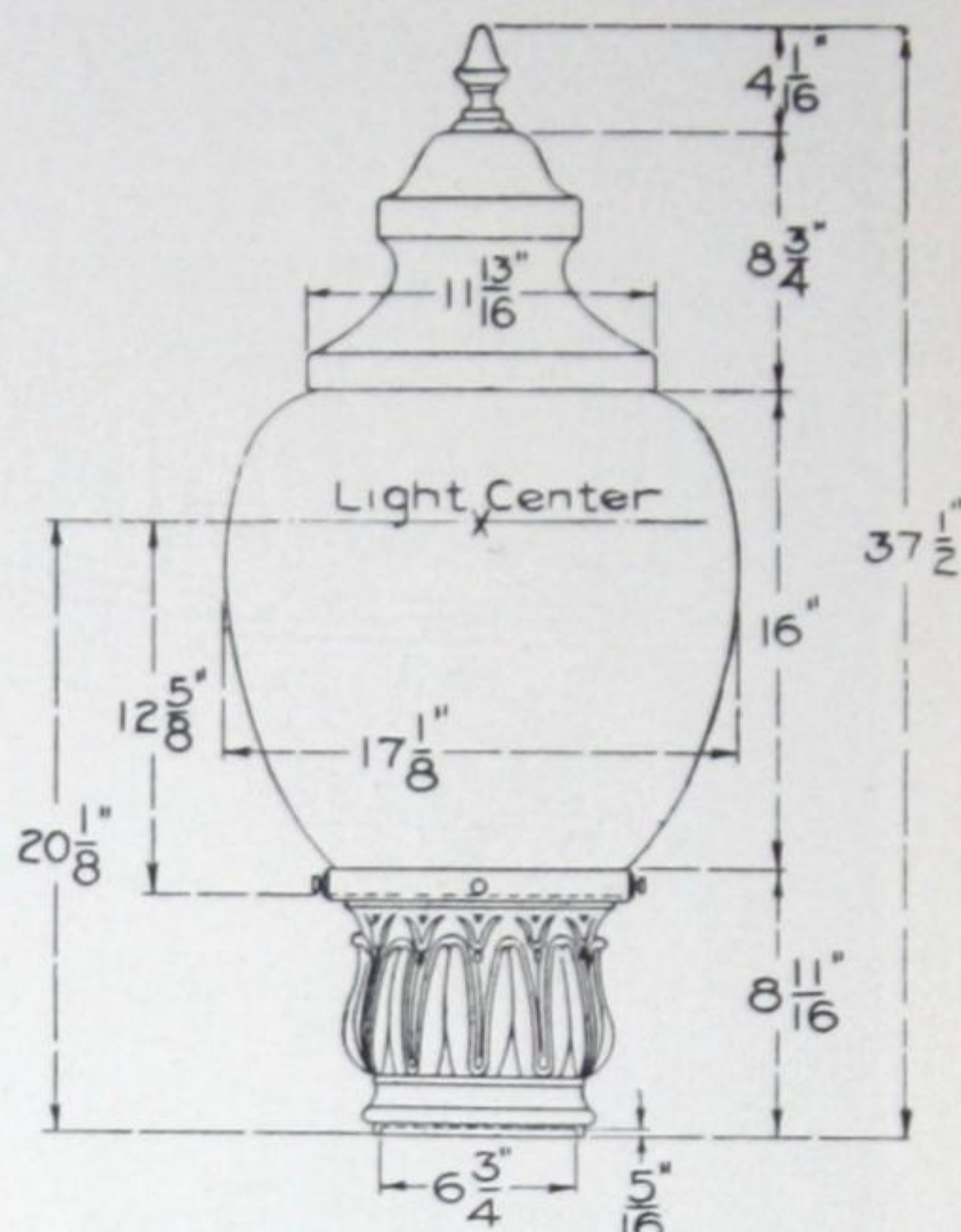


Fig. 9
(K-1257997)

Luminaire with No. 118 globe, No. 1118 canopy, and Form E casing

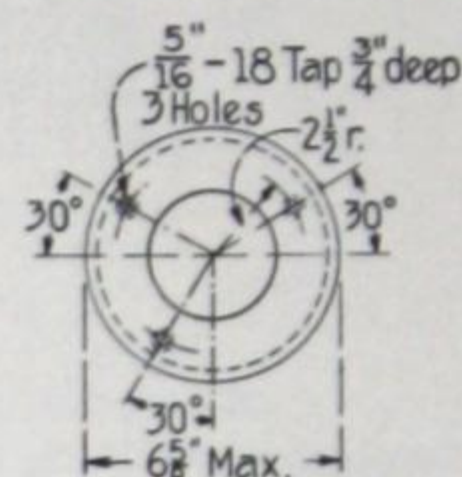


Fig. 10
Pole-top dimensions,
Form E casing

DIMENSIONS—FORM 12

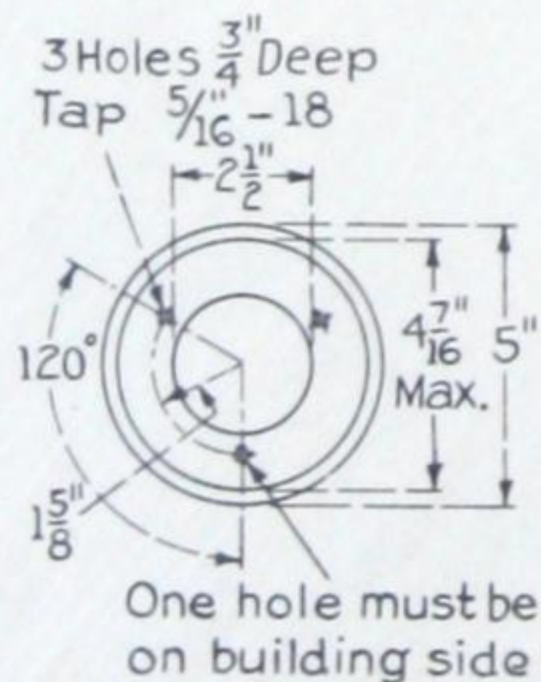


Fig. 11
Pole-top dimensions,
all Form 12 casings

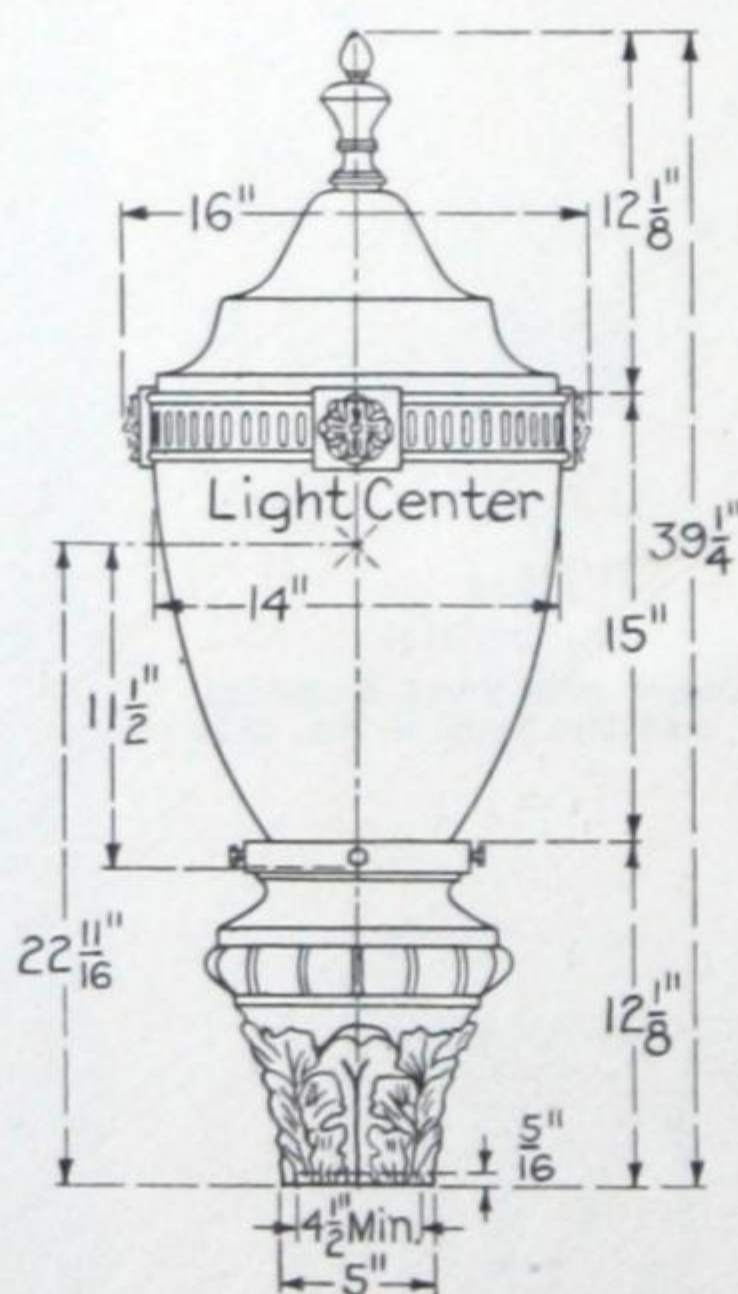


Fig. 12
(K-4802508)

Form 12 luminaire with "O" casing,
No. 103 or No. 123 globe, and
No. 1103 or No. 1123 canopy

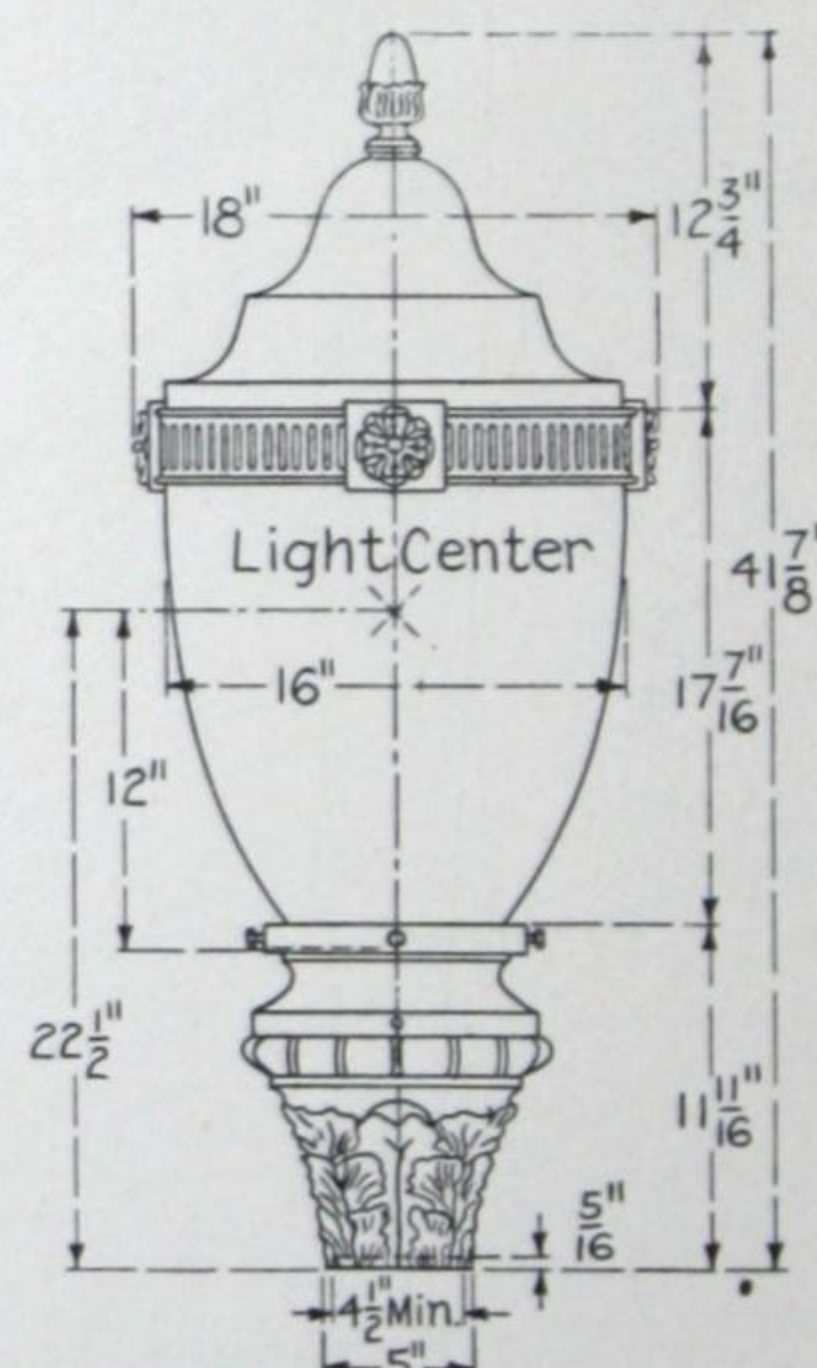


Fig. 13
(K-1237916)

Form 12 luminaire with "M" casing,
No. 104 or No. 124 globe, and No. 1104
or No. 1124 canopy

G-E NOVALUX ORNAMENTAL LUMINAIRES

DIMENSIONS—FORM 12 (Cont)

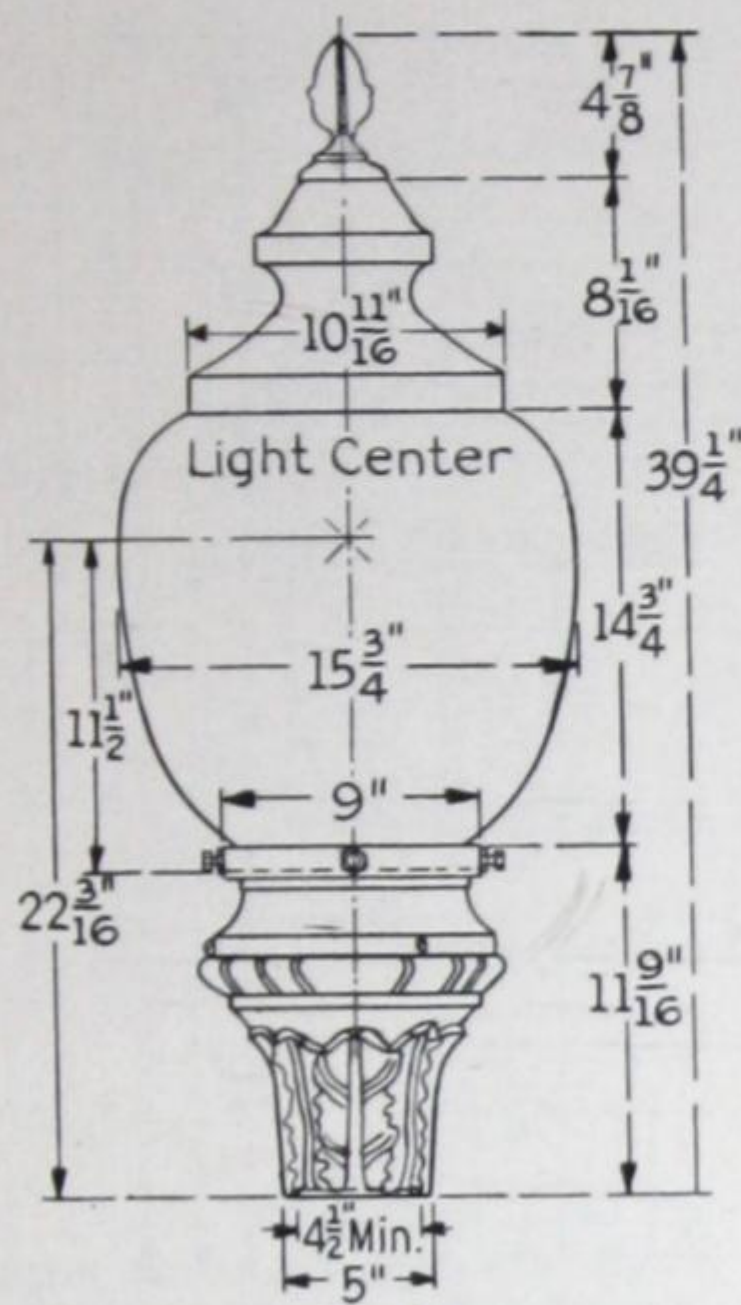


Fig. 14
(K-1279072)

Luminaire with "M" casing, No. 127 globe, and No. 1127 canopy

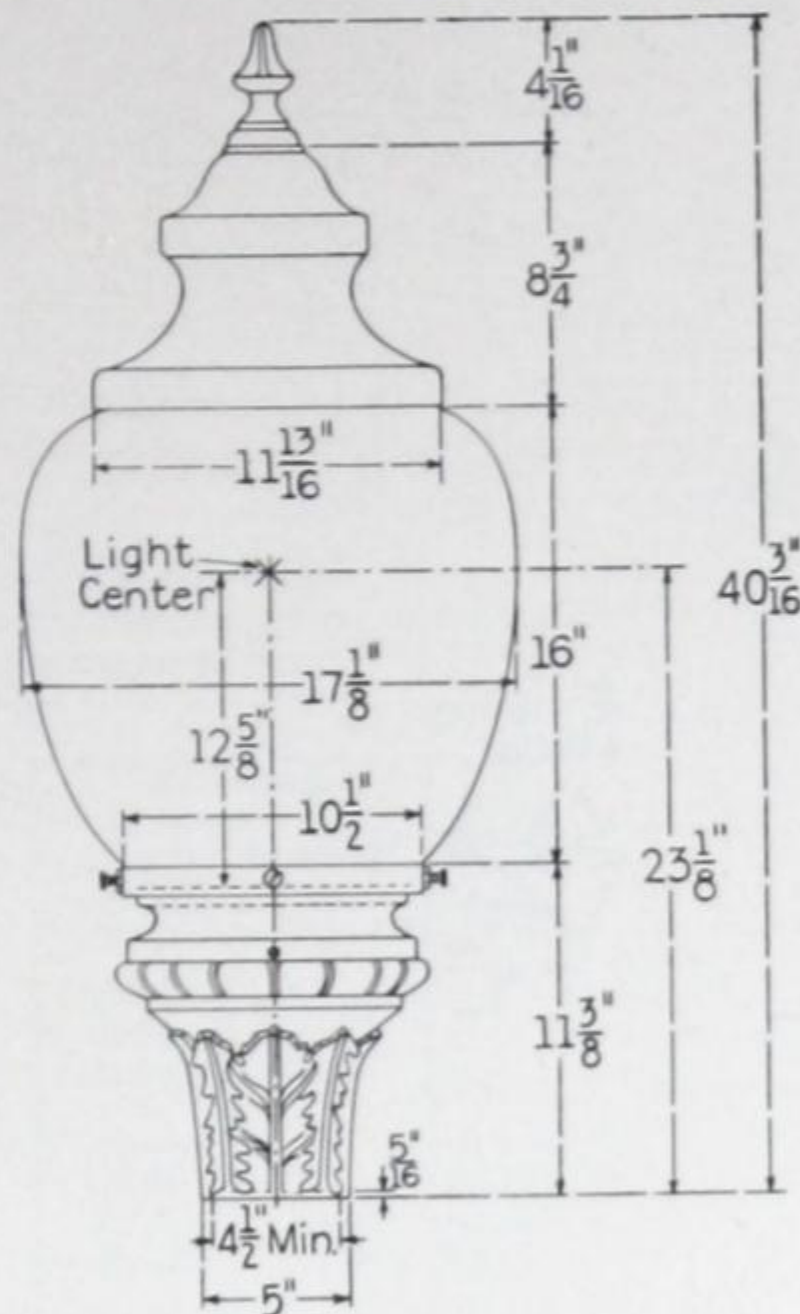


Fig. 15
(K-1279315)

Luminaire with "N" casing, No. 118 globe, and No. 1118 canopy

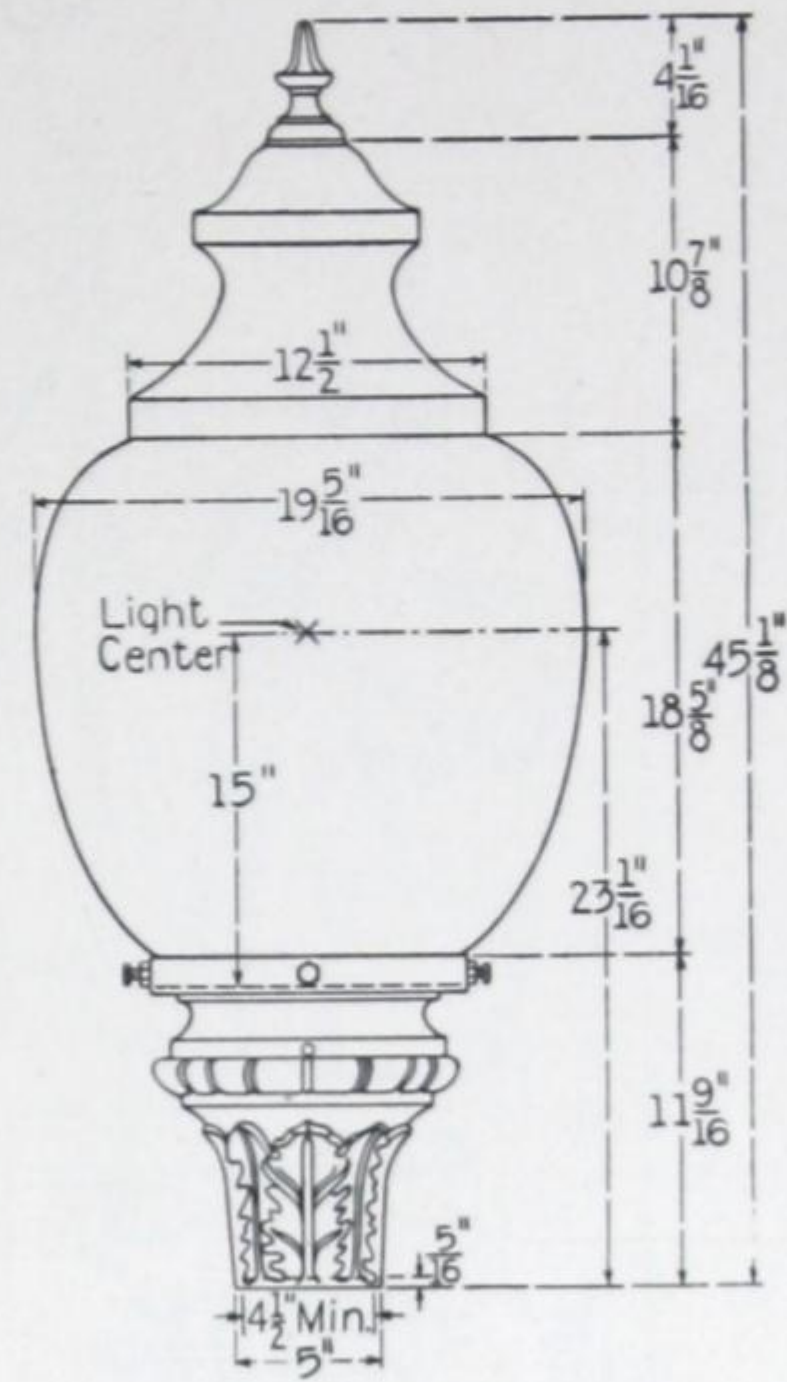


Fig. 16
(K-1272288)

Luminaire with "19" casing, No. 126 globe, and No. 1126 canopy

DIMENSIONS—FORM 13

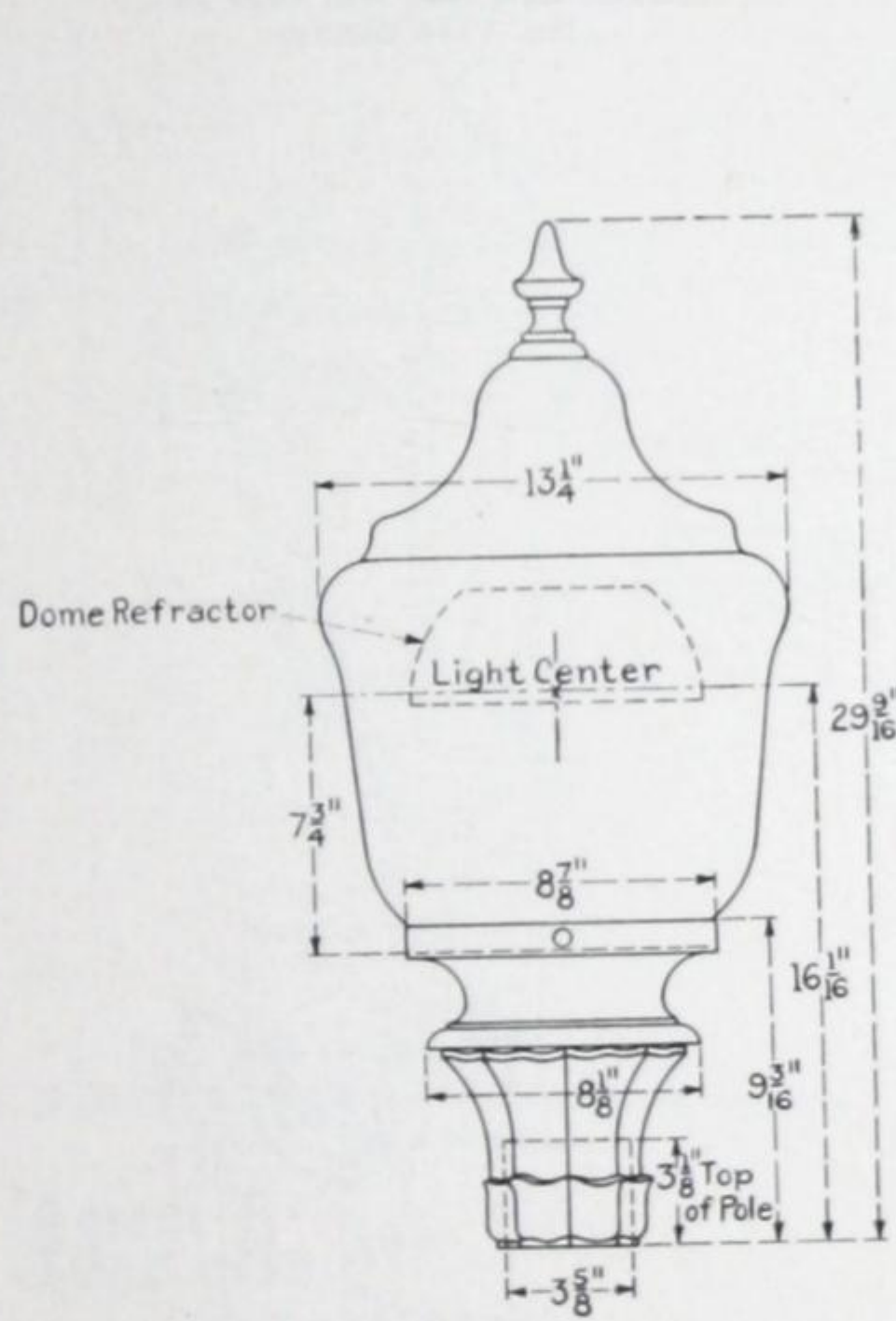


Fig. 17
(K-1257884)

Luminaire with No. 109 globe, No. 1109 canopy, and Form 12K casing

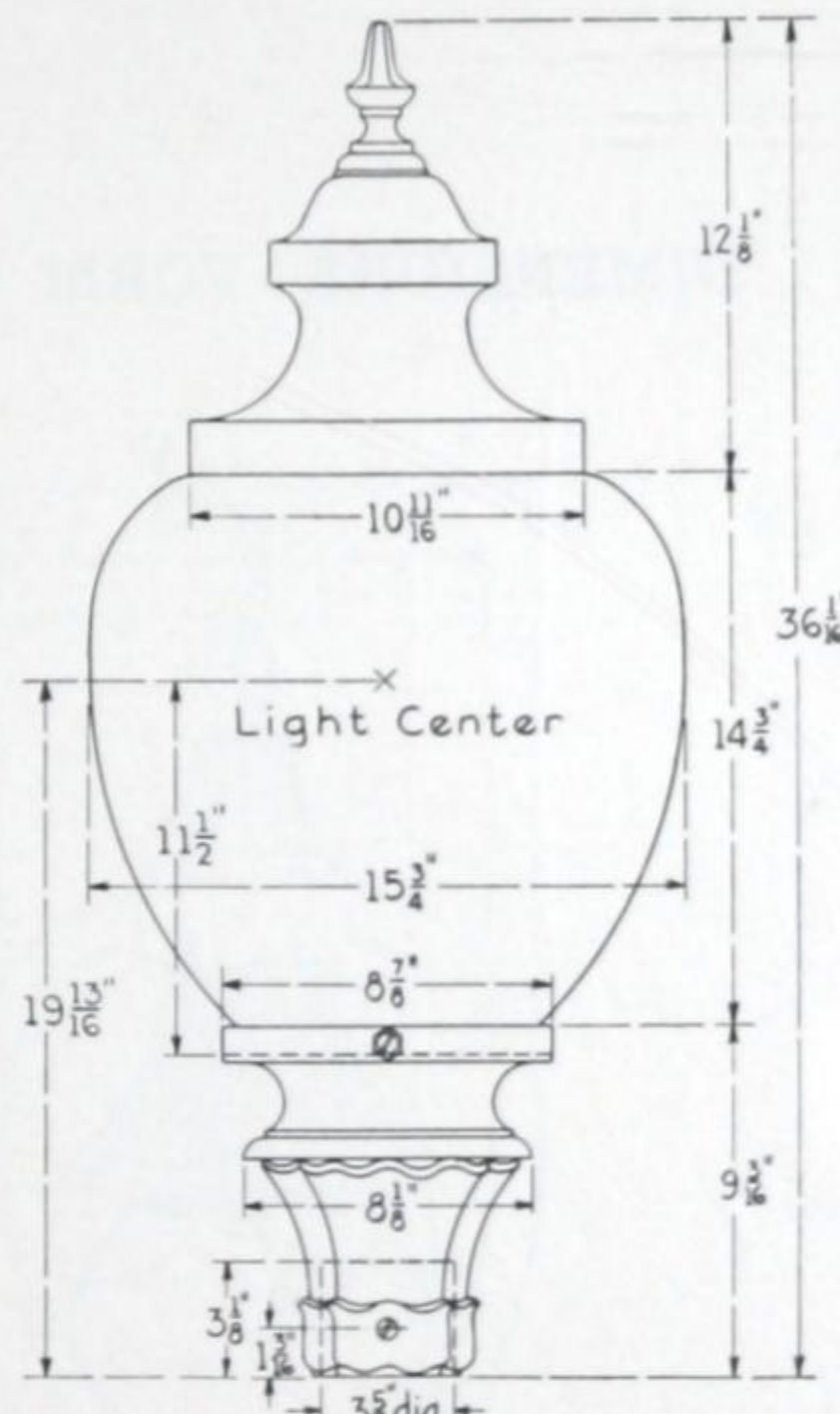


Fig. 18
(K-1279063)

Luminaire with No. 127 globe, No. 1127 canopy, and Form 12K casing

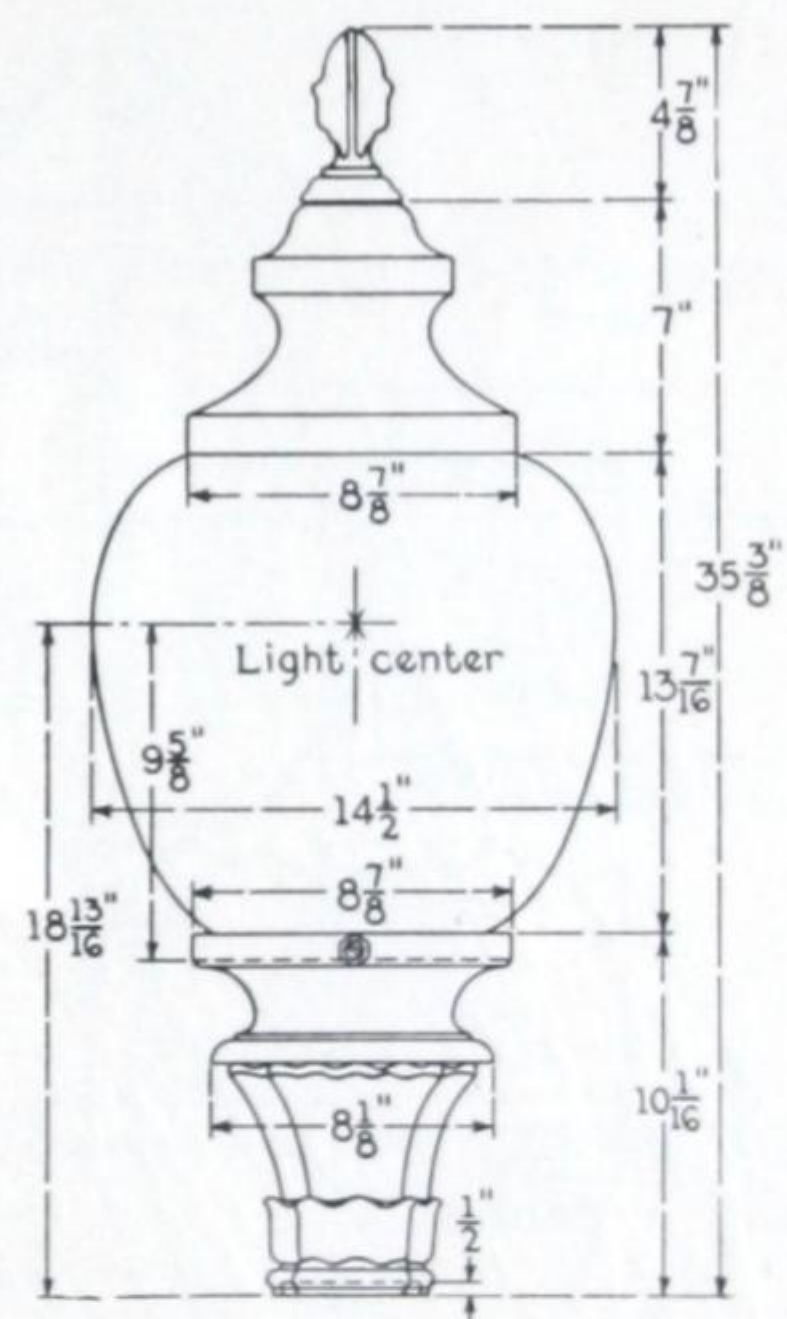


Fig. 19
(K-1279060)

Luminaire with No. 128 globe, No. 1128 canopy, and Form 13 casing

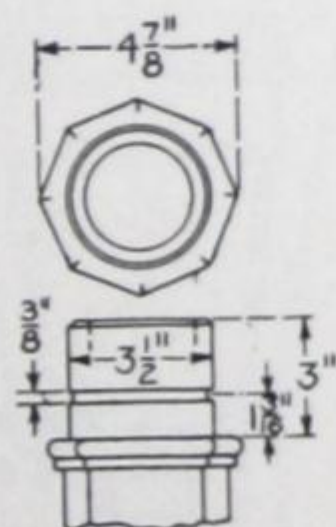


Fig. 20
Pole top for Forms JK and 12K casings

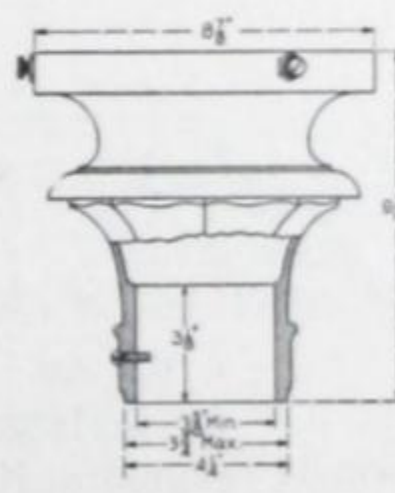


Fig. 21
Form 12K casing

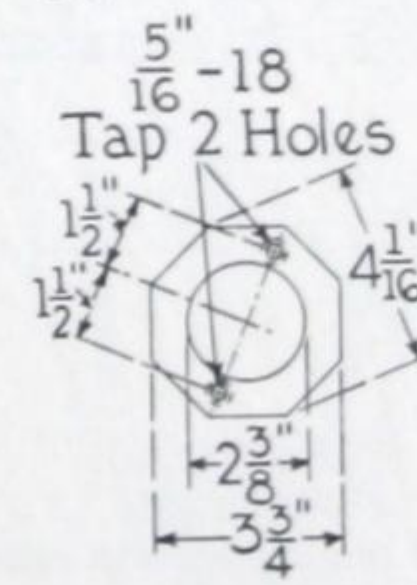


Fig. 22
Pole-top drilling for Forms J and 13 casings

G-E NOVALUX ORNAMENTAL LUMINAIRES

DIMENSIONS—FORM 16

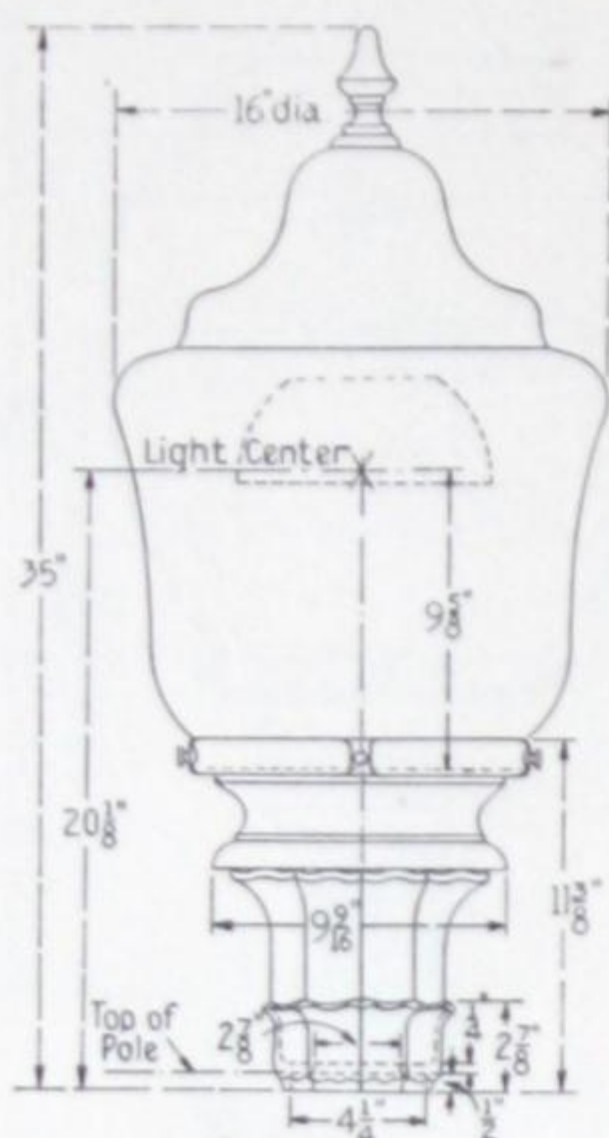


Fig. 23
(K-1257659)

Luminaire with Form Q casing, No. 107 or
No. 37 globe, and No. 1107 or
No. 1037 canopy

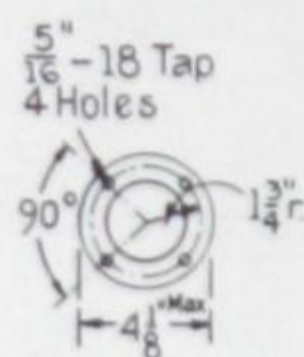


Fig. 24
Pole-top dimensions

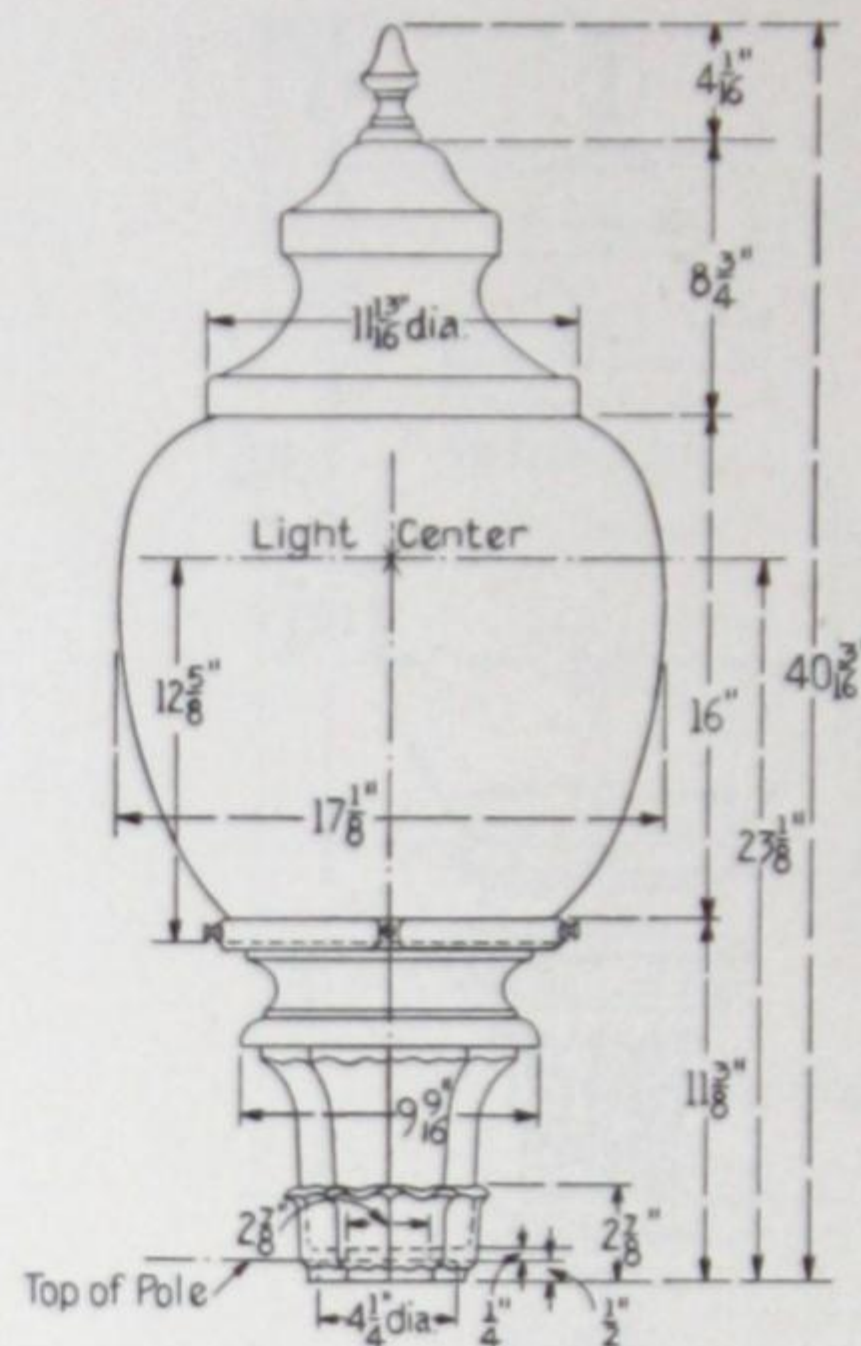


Fig. 25
(K-1257974)

Luminaire with Form Q casing, No. 97 or
No. 118, and No. 1097 or
No. 1118 canopy

DIMENSIONS—FORM 17

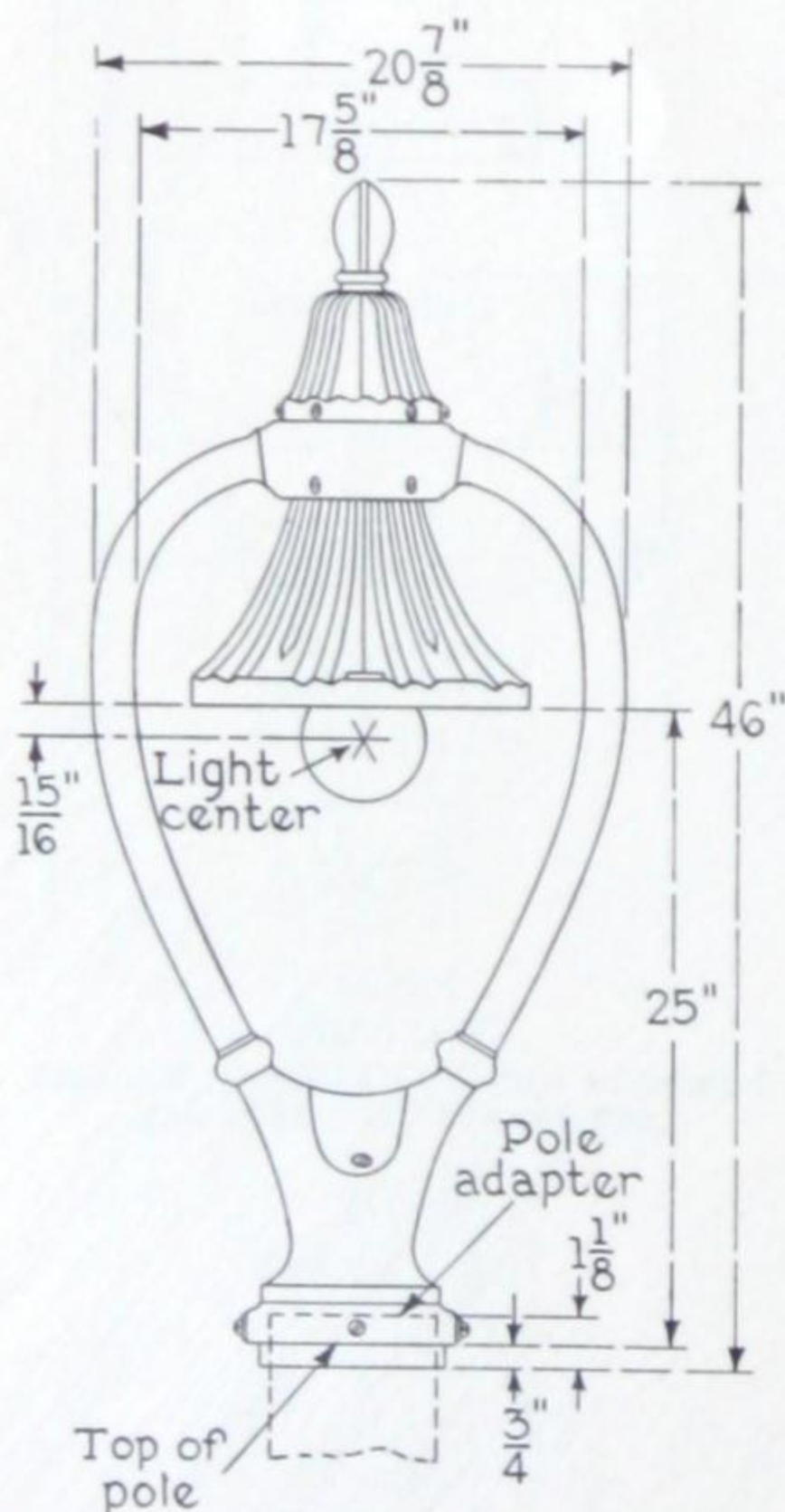


Fig. 26
(K-4821863)
Form 17 luminaire, with reflector

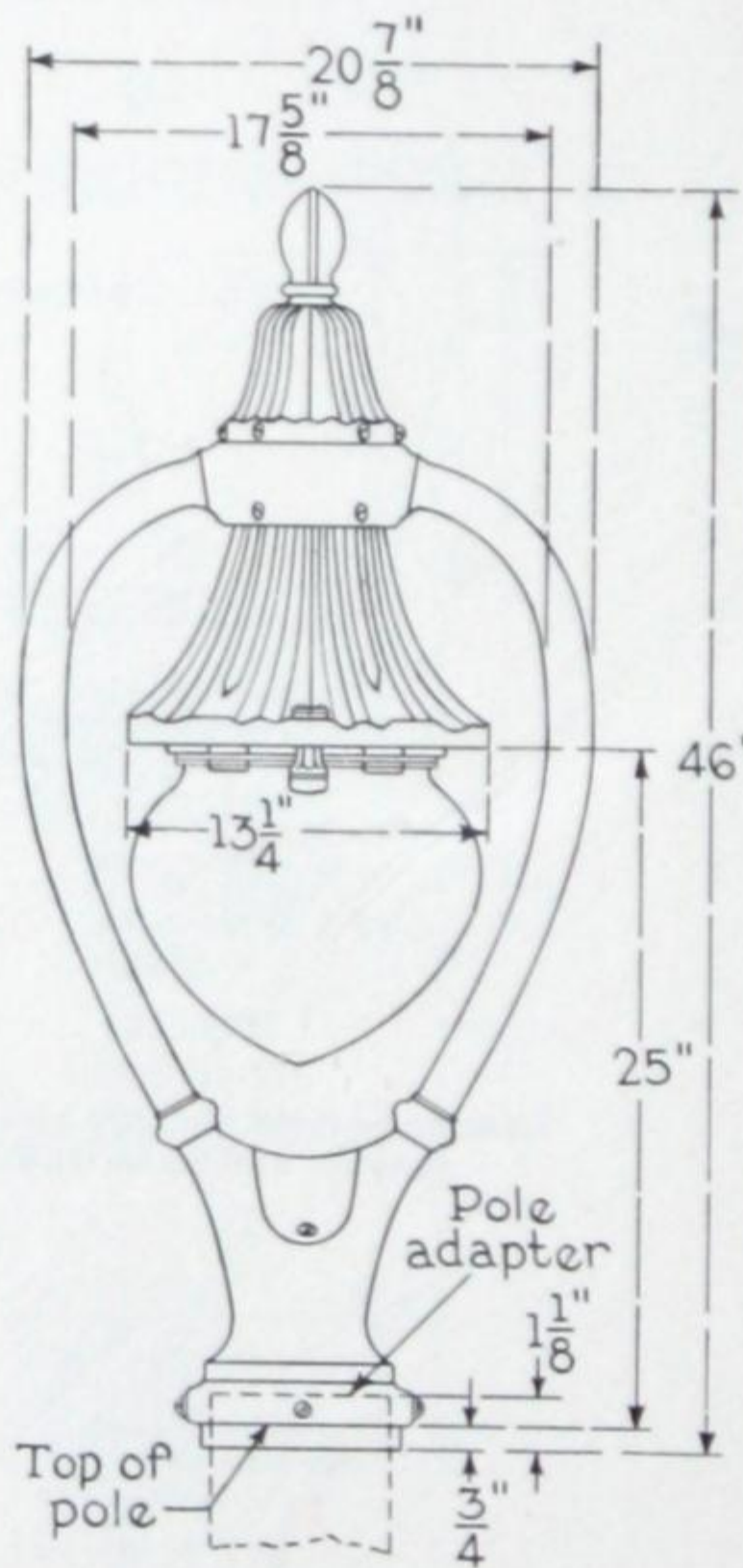


Fig. 27
(K-4821865)
Form 17 luminaire, No. 166 globe

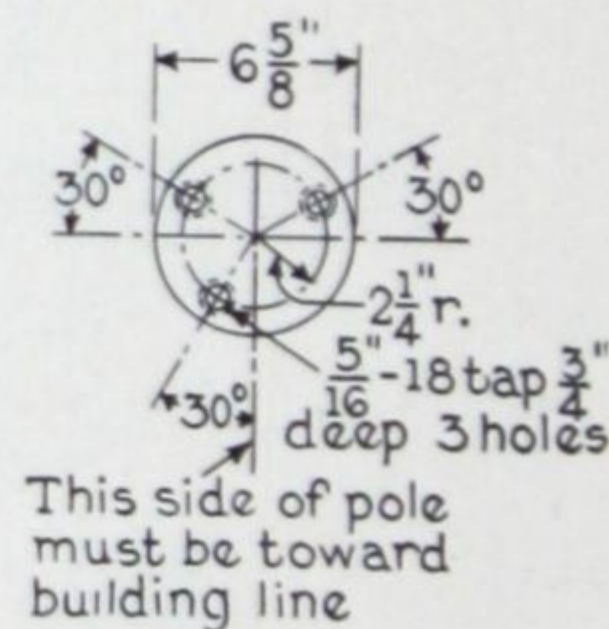


Fig. 28
Pole-top drilling

G-E NOVALUX ORNAMENTAL LUMINAIRES

DIMENSIONS—FORMS 18A, 18B, 19A, AND 19B

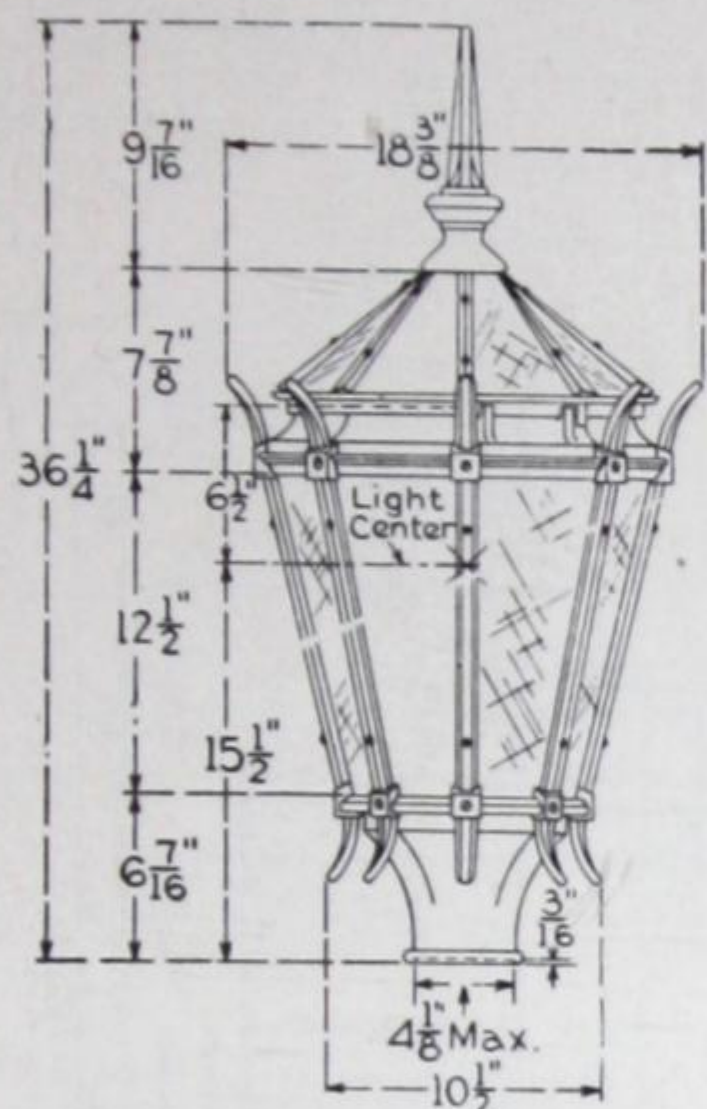


Fig. 29

(K-1245610)

Form 18A luminaire—4-in. pole—S casing (drilling plan—Fig. 30)

LIGHT CENTER					FIG. NO.
DIMENSIONS IN INCHES					
7-, 8 $\frac{1}{4}$ -, 9 $\frac{1}{2}$ -in. Light Center	8 $\frac{1}{4}$ -in. Light Center		Series Auto- transformer		
	Series or Multiple				
	4000- 6000 Lumens	10,000 Lumens			
A	6 $\frac{3}{8}$	5 $\frac{1}{4}$	4 $\frac{5}{8}$	30, 31, 32	
B	17 $\frac{3}{8}$	18 $\frac{1}{2}$	19 $\frac{1}{8}$	30, 31	
B	19 $\frac{3}{16}$	20 $\frac{1}{2}$ $\frac{1}{16}$	21 $\frac{9}{16}$	32	

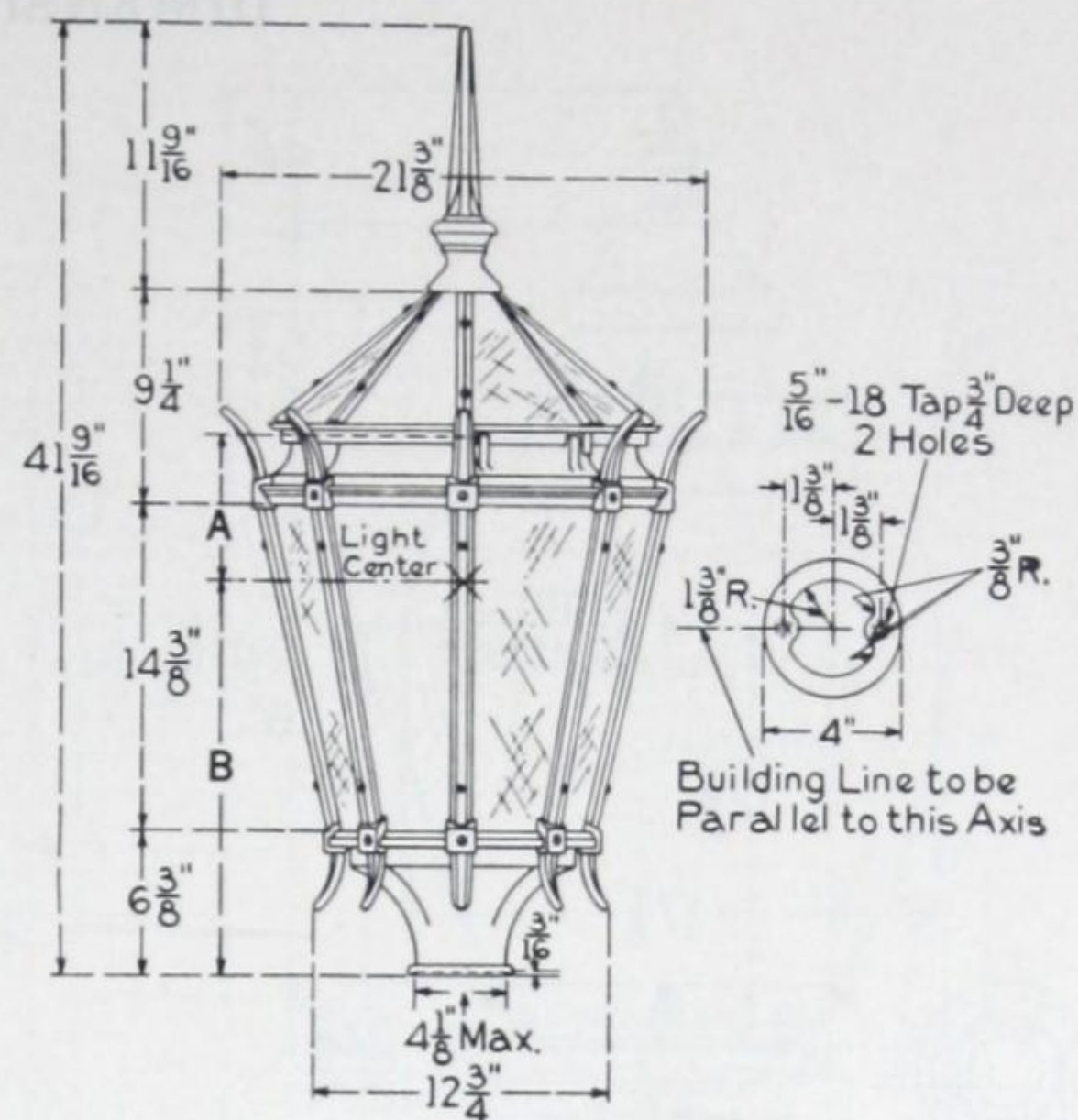


Fig. 30

(K-4821853)

Form 18B luminaire—4-in. pole—R casing

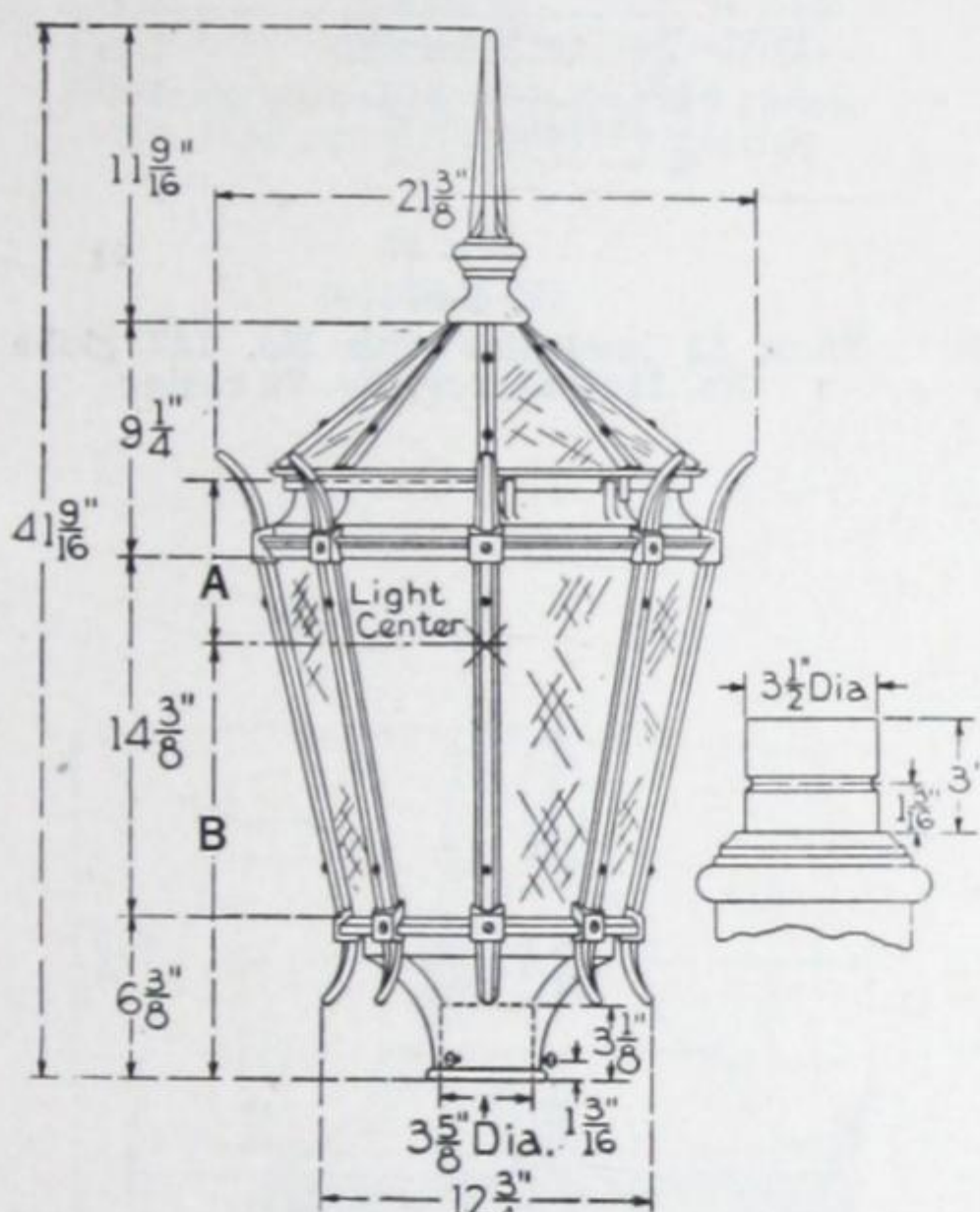


Fig. 31

(K-1245679)

Form 18B luminaire—4-in. King pole—RK casing

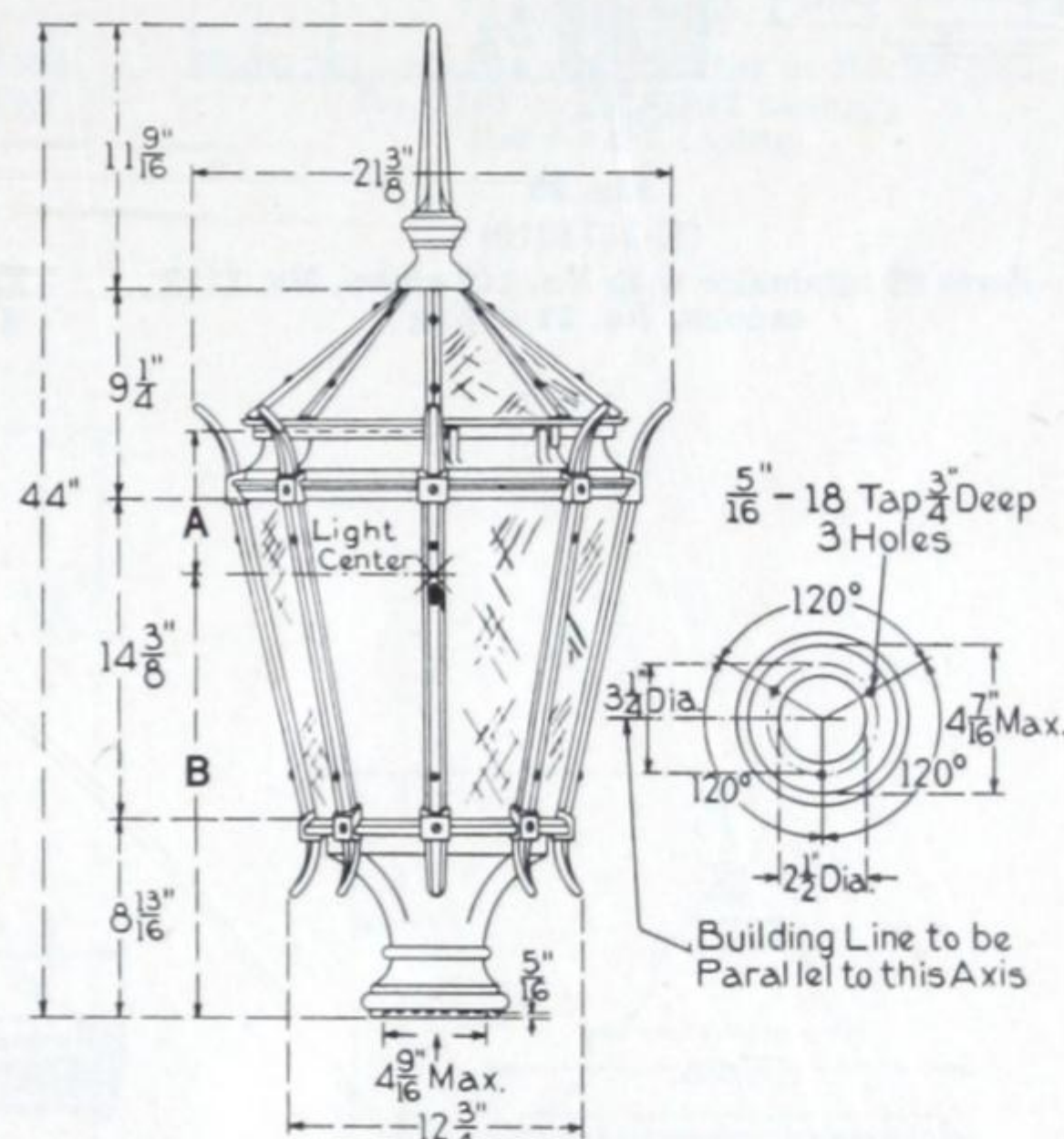


Fig. 32

(K-1245602)

Form 18B luminaire—5-in. pole—RW casing

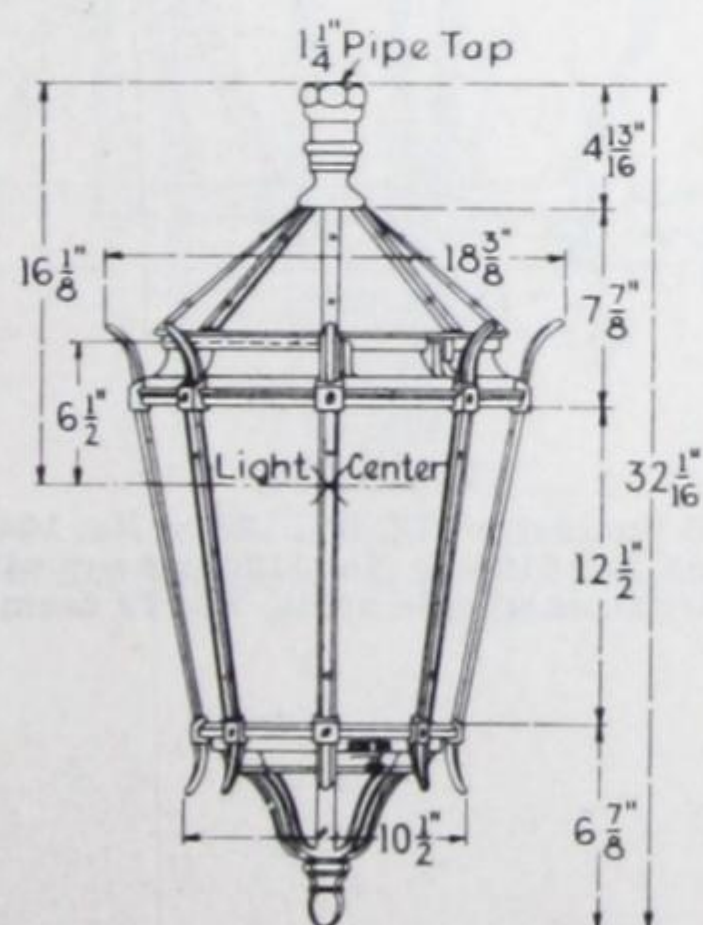
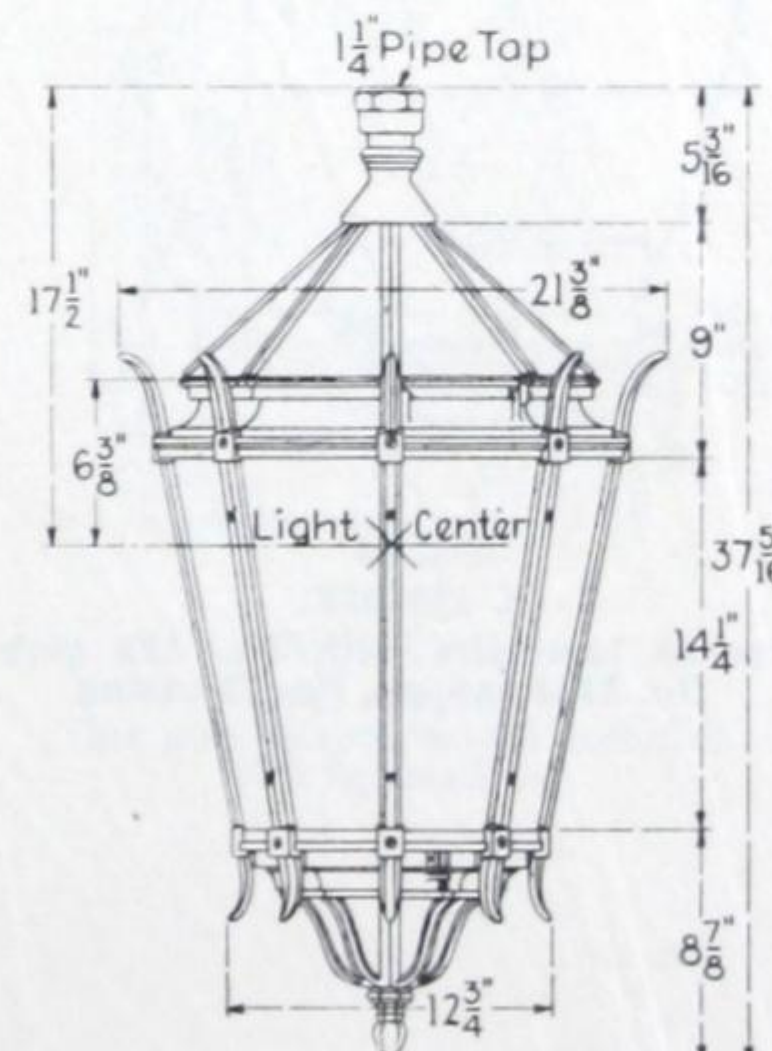


Fig. 33 (Left)

(K-1256184)

Form 19A luminaire

Fig. 34 (Right)
(K-3706061)
Form 19B luminaire



G-E NOVALUX ORNAMENTAL LUMINAIRES

DIMENSIONS—FORMS 27 AND 33

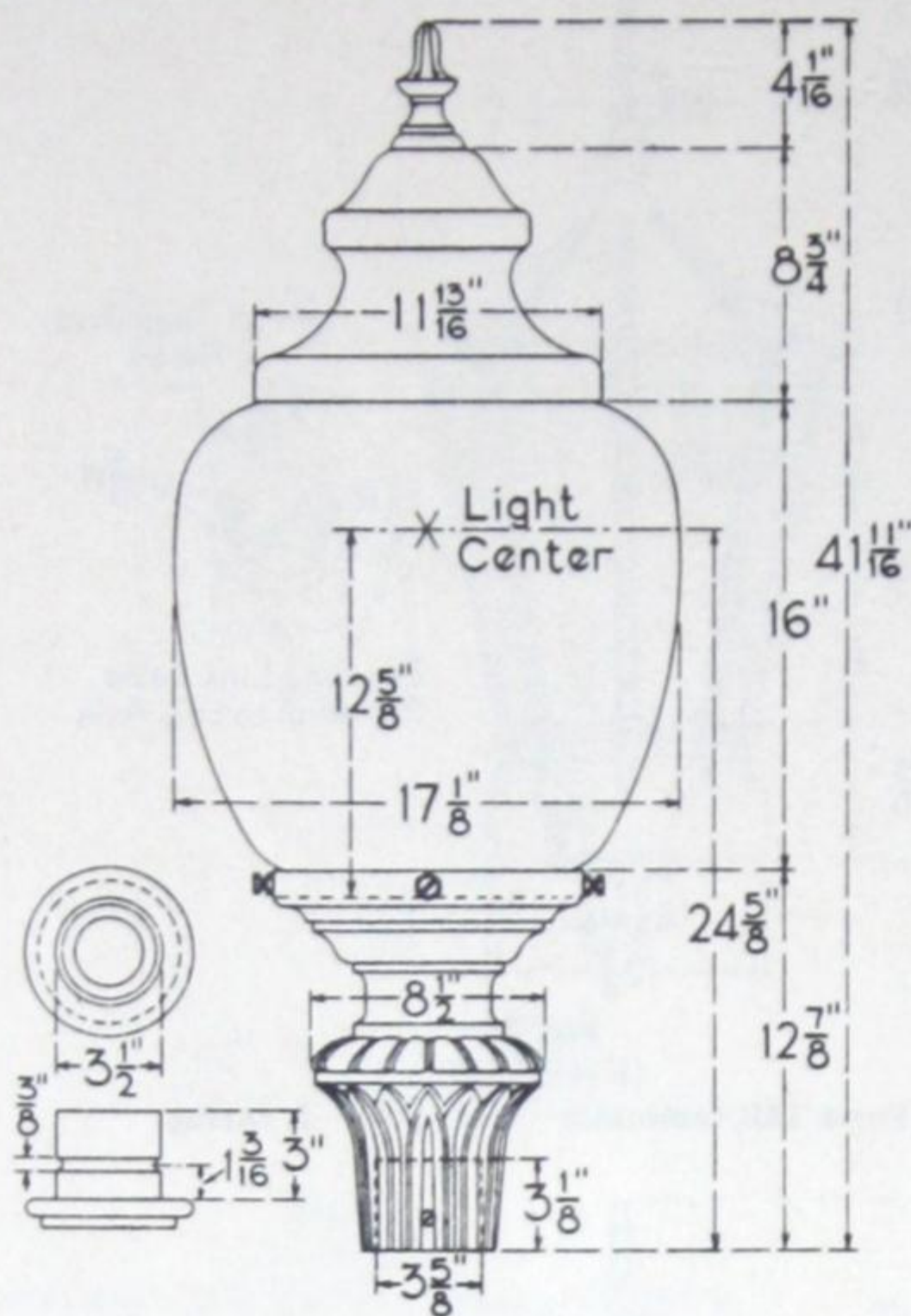


Fig. 35
(K-1272310)

Form 27 luminaire with No. 118 globe, No. 1118 canopy, No. 21 casing

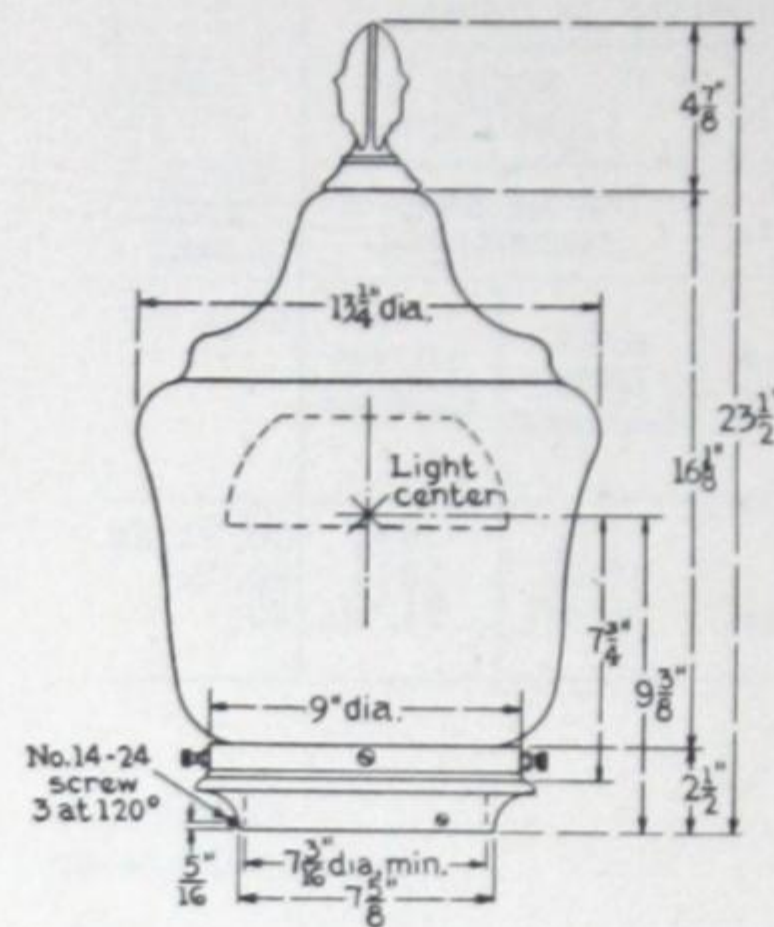


Fig. 36
(K-4867033)

Form 33 luminaire with No. 109 or No. 39 globe, and No. 1109 or No. 1039 canopy, No. 72 casing

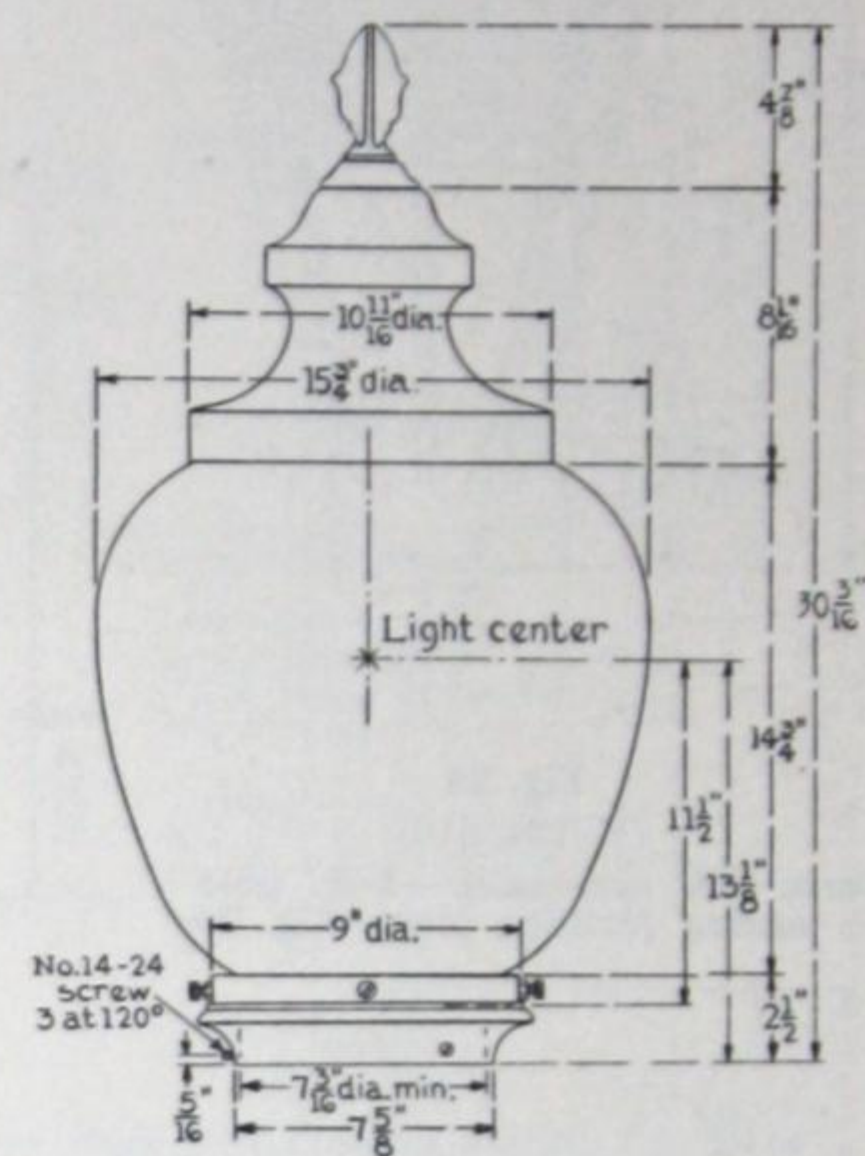


Fig. 37
(K-4867030)

Form 33 luminaire with No. 127 globe, No. 1127 canopy, No. 72 casing

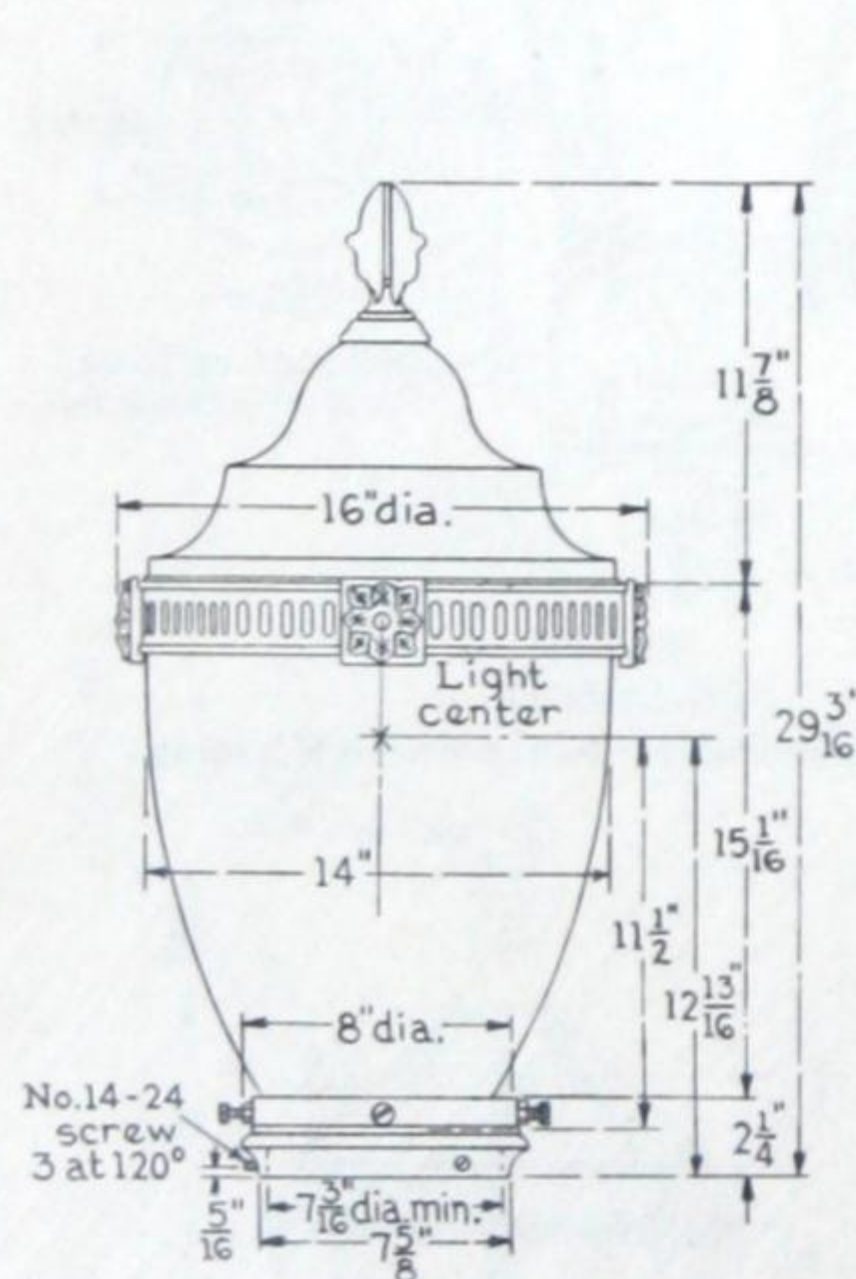


Fig. 38
(K-4867032)

Form 33 luminaire with No. 123 globe, No. 1123 canopy, No. 73 casing

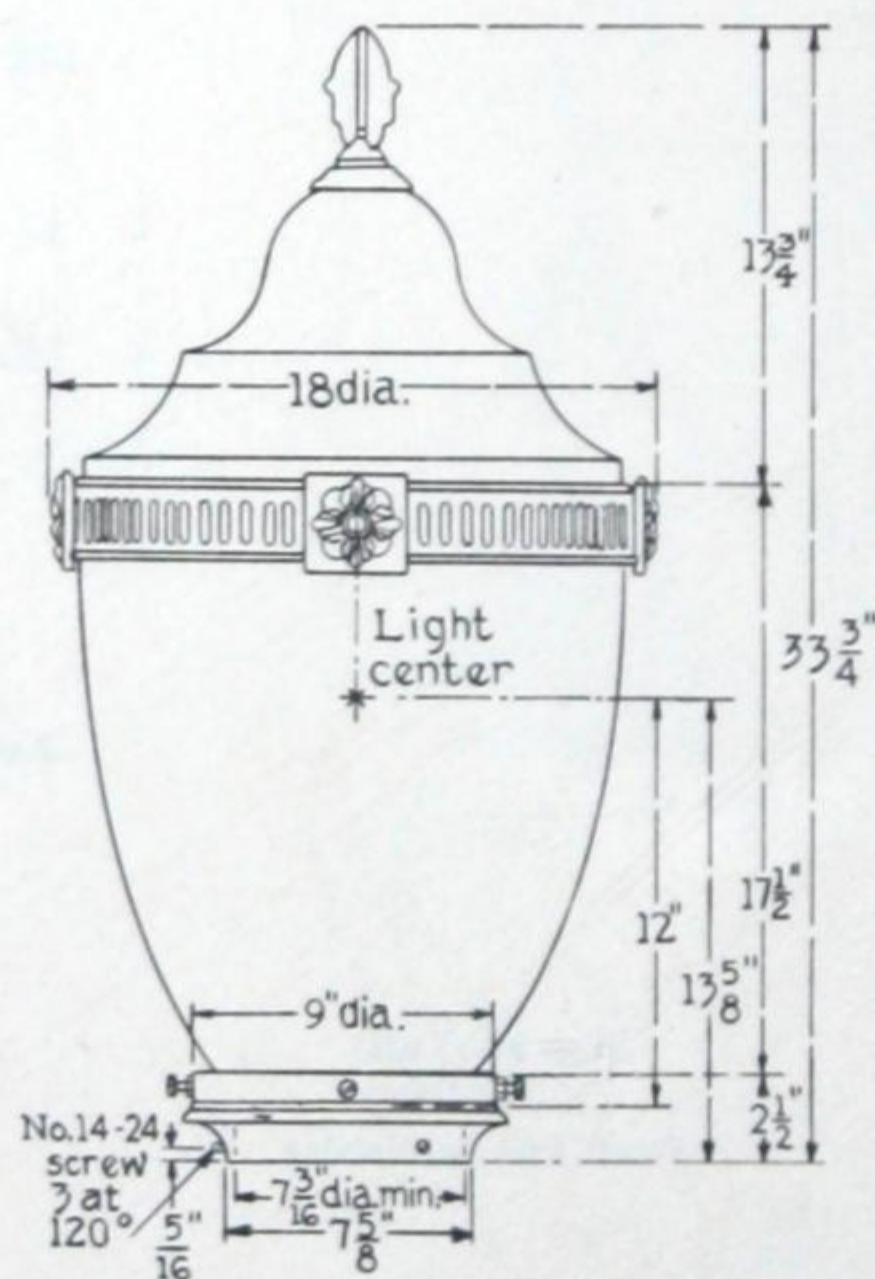


Fig. 39
(K-4867031)

Form 33 luminaire with No. 124 or No. 104 globe, and No. 1124 or No. 1104 canopy, No. 72 casing

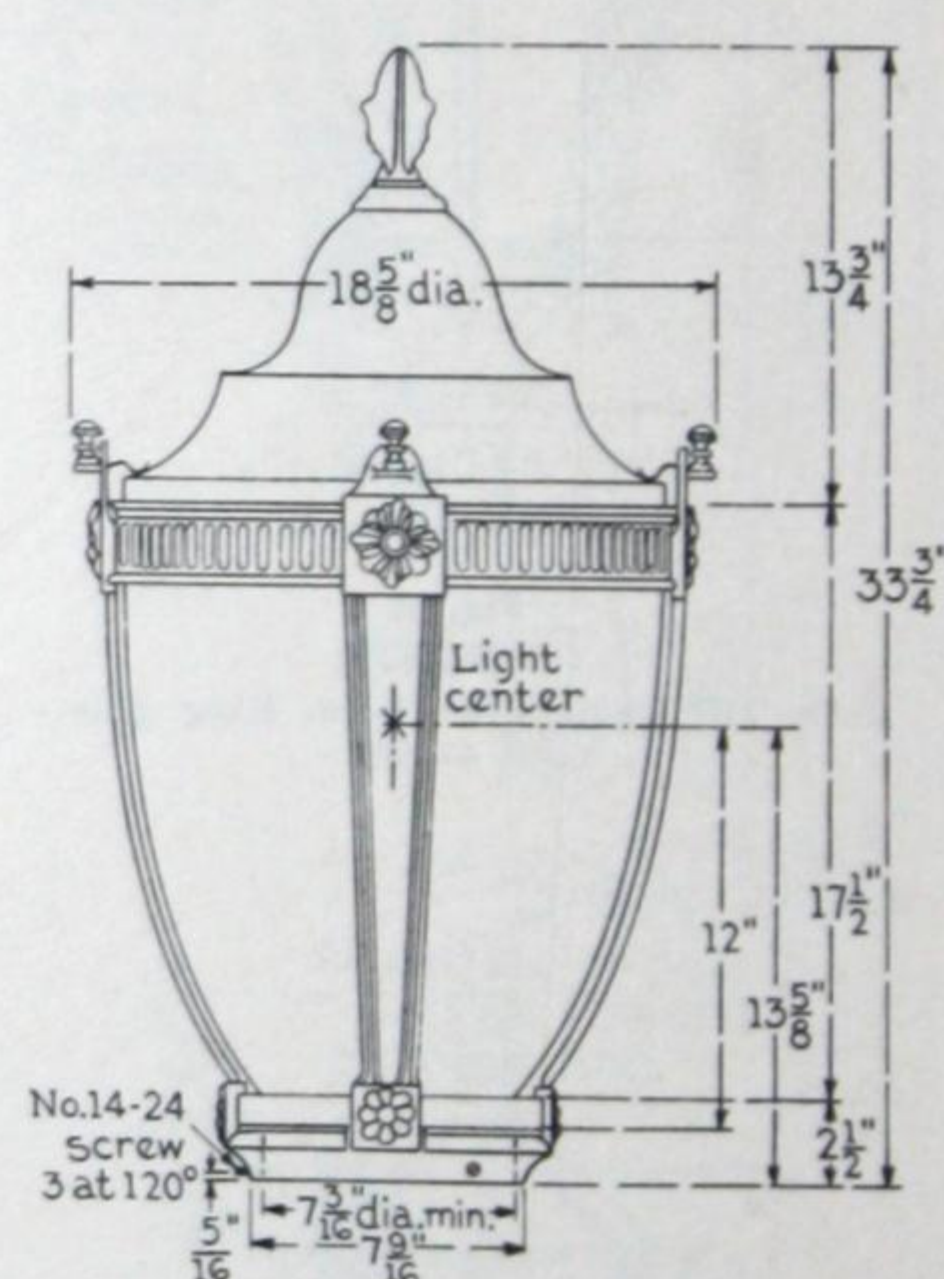


Fig. 40
(K-4821934)

Form 33 luminaire with No. 124 or No. 104 globe, and No. 1104 or No. 1124 canopy with ornamental side arms, No. 72 casing

G-E NOVALUX ORNAMENTAL LUMINAIRES

DIMENSIONS—FORM 33 (Cont)

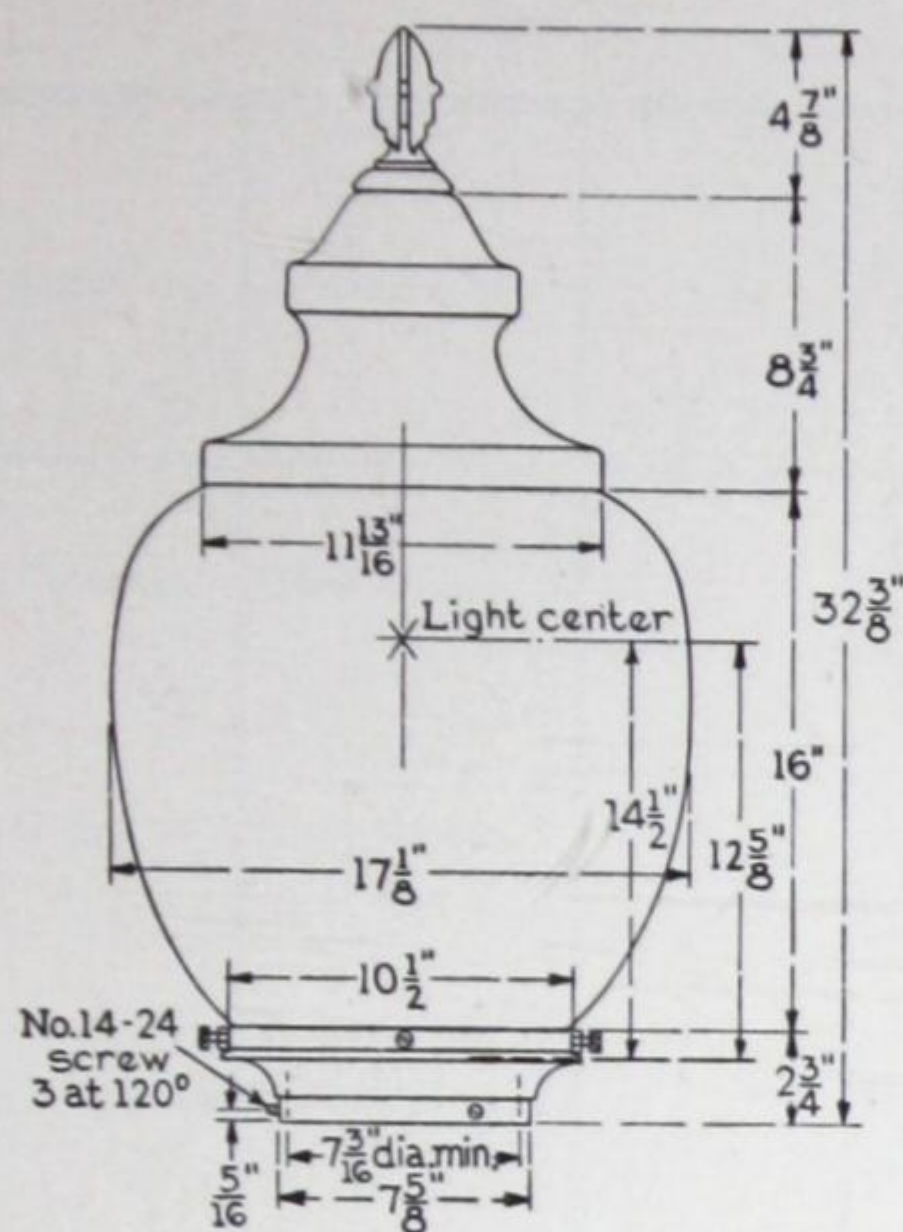


Fig. 41
(K-4867029)

Form 33 luminaire with No. 118 globe,
No. 1118 canopy, and No. 71 casing

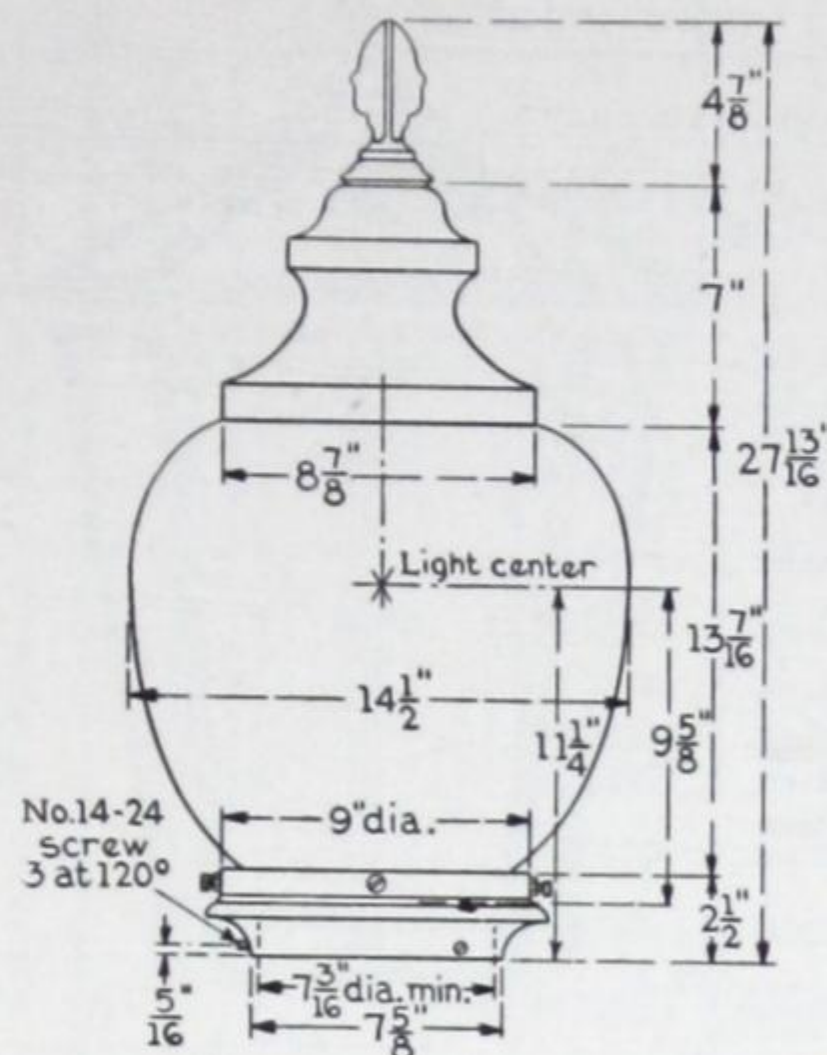


Fig. 42
(K-4867034)

Form 33 luminaire with No. 128 globe,
No. 1128 canopy, and No. 72 casing

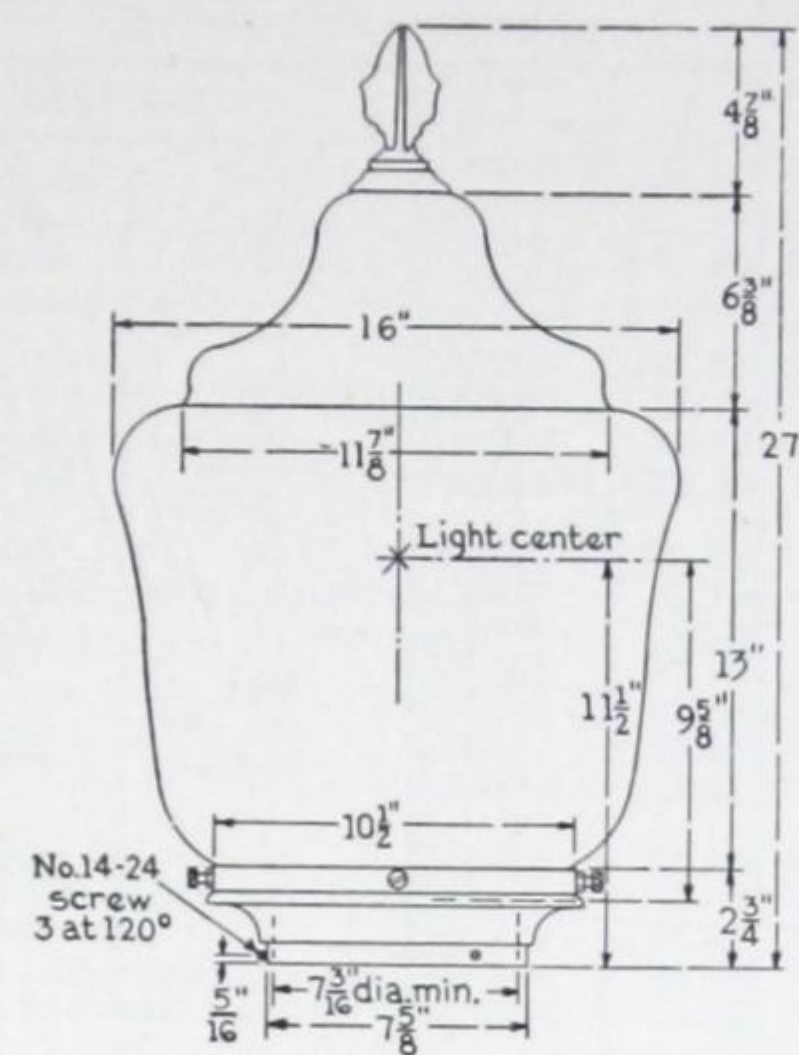


Fig. 43
(K-4867028)

Form 33 luminaire with No. 107 or No. 37 globe,
No. 1107 or No. 1037 canopy,
and No. 71 casing

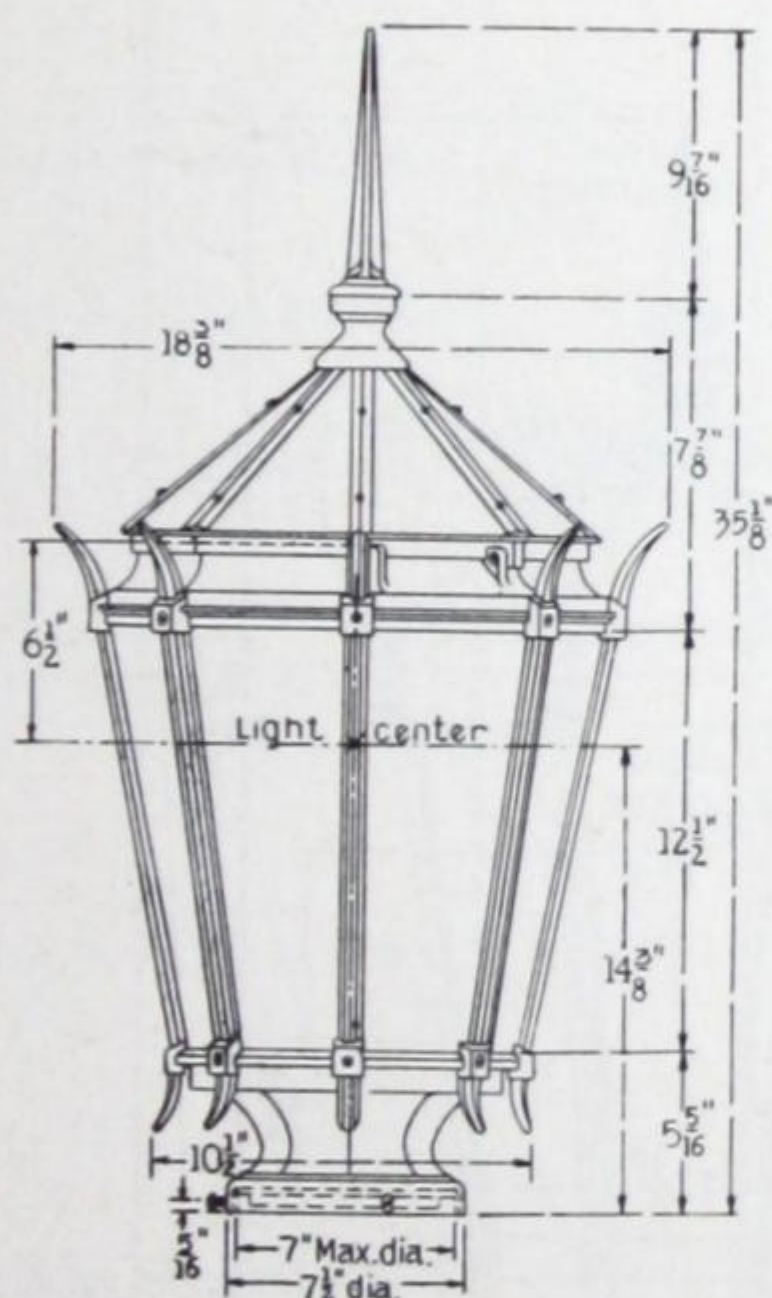


Fig. 44
(K-3758240)

Form 33A luminaire and No. 59 casing

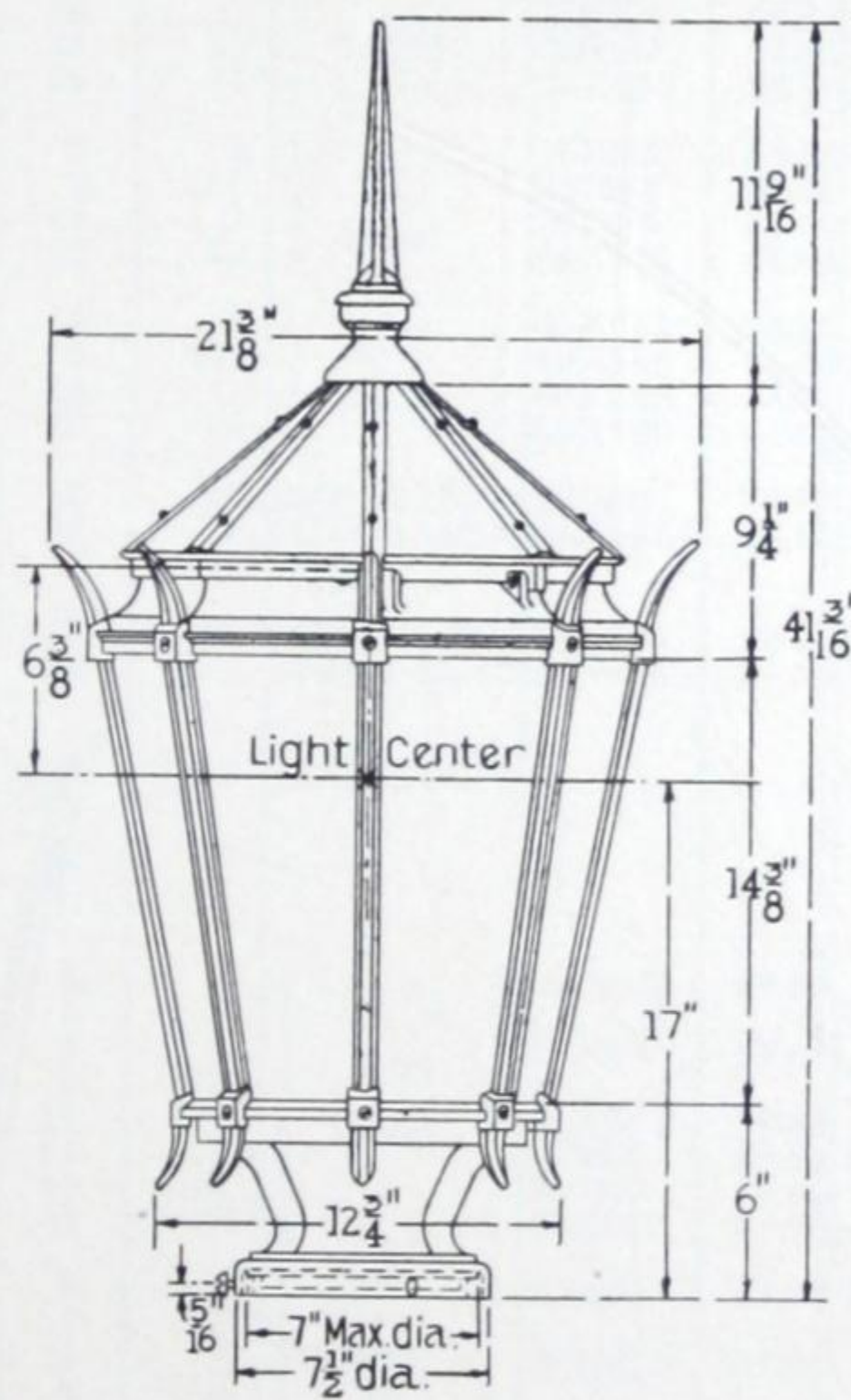


Fig. 45
(K-3758241)

Form 33B luminaire and No. 60 casing

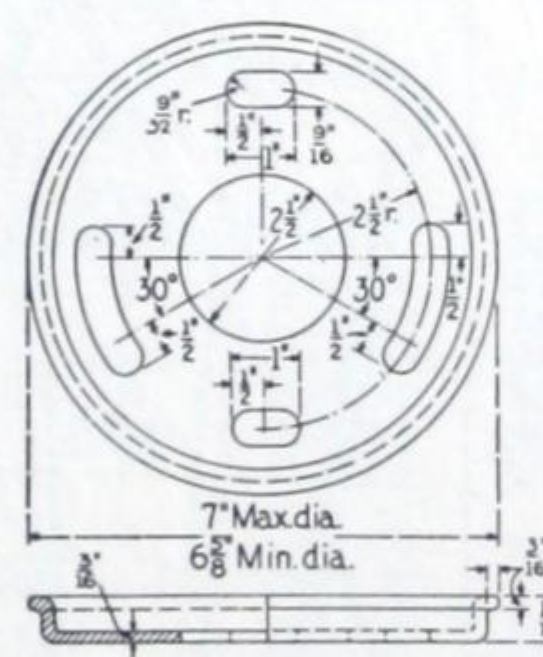


Fig. 46
(K-2378294)

Pole adapter
(This pole adapter is not included
with luminaire)

G-E NOVALUX ORNAMENTAL LUMINAIRES

DIMENSIONS—FORM 38

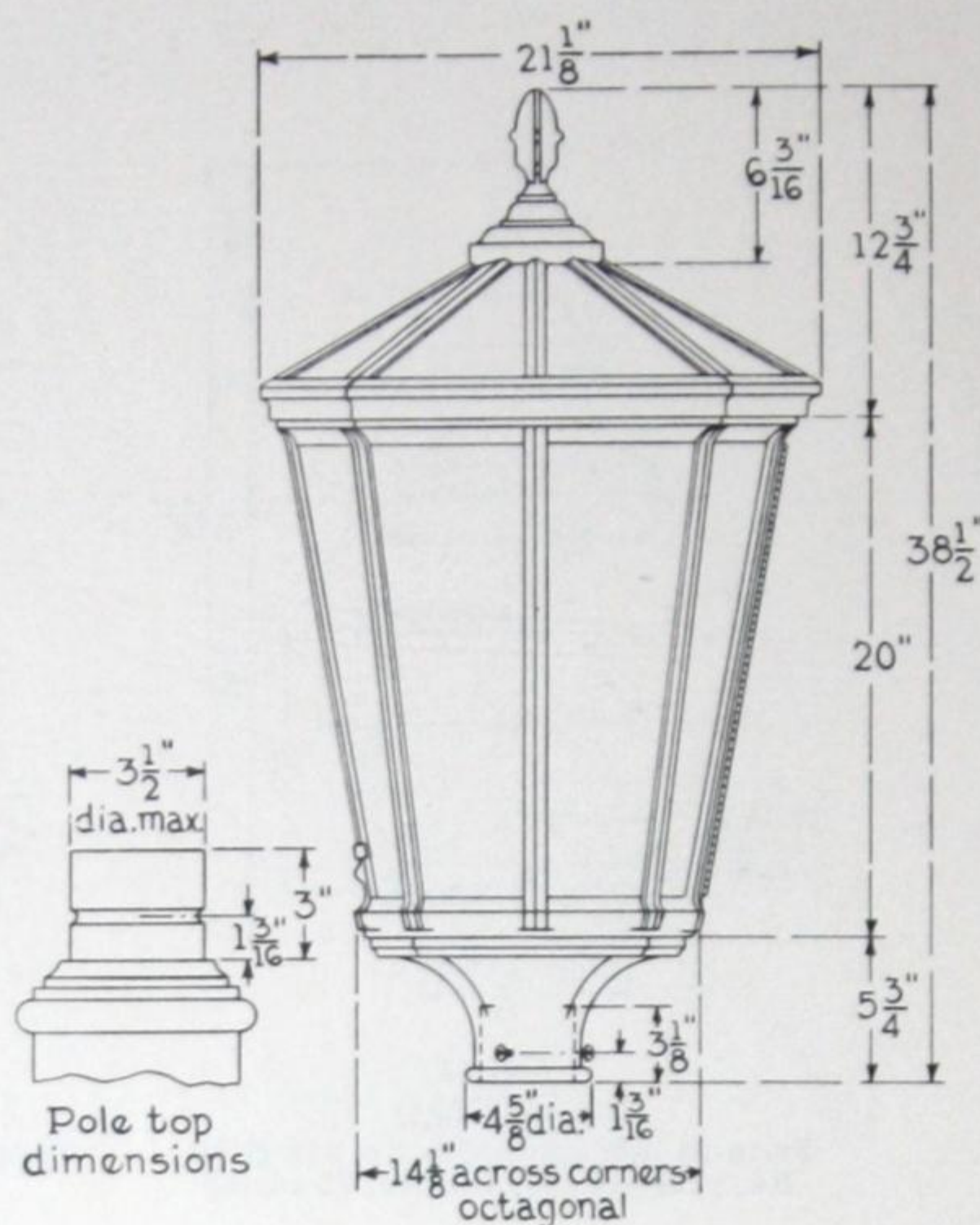


Fig. 47

(K-4802863)

Form 38 luminaire, RK casing

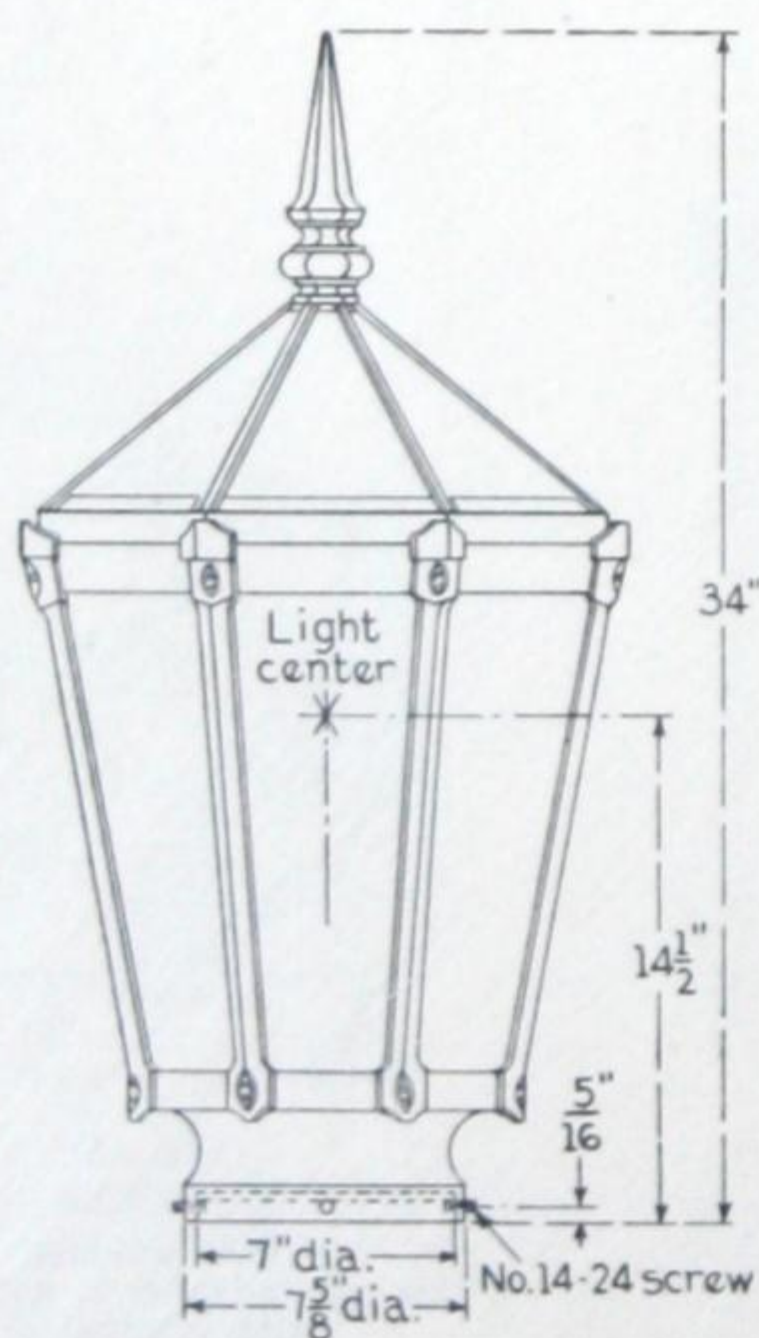


Fig. 48

(K-4821729)

Form 56 luminaire, metal canopy

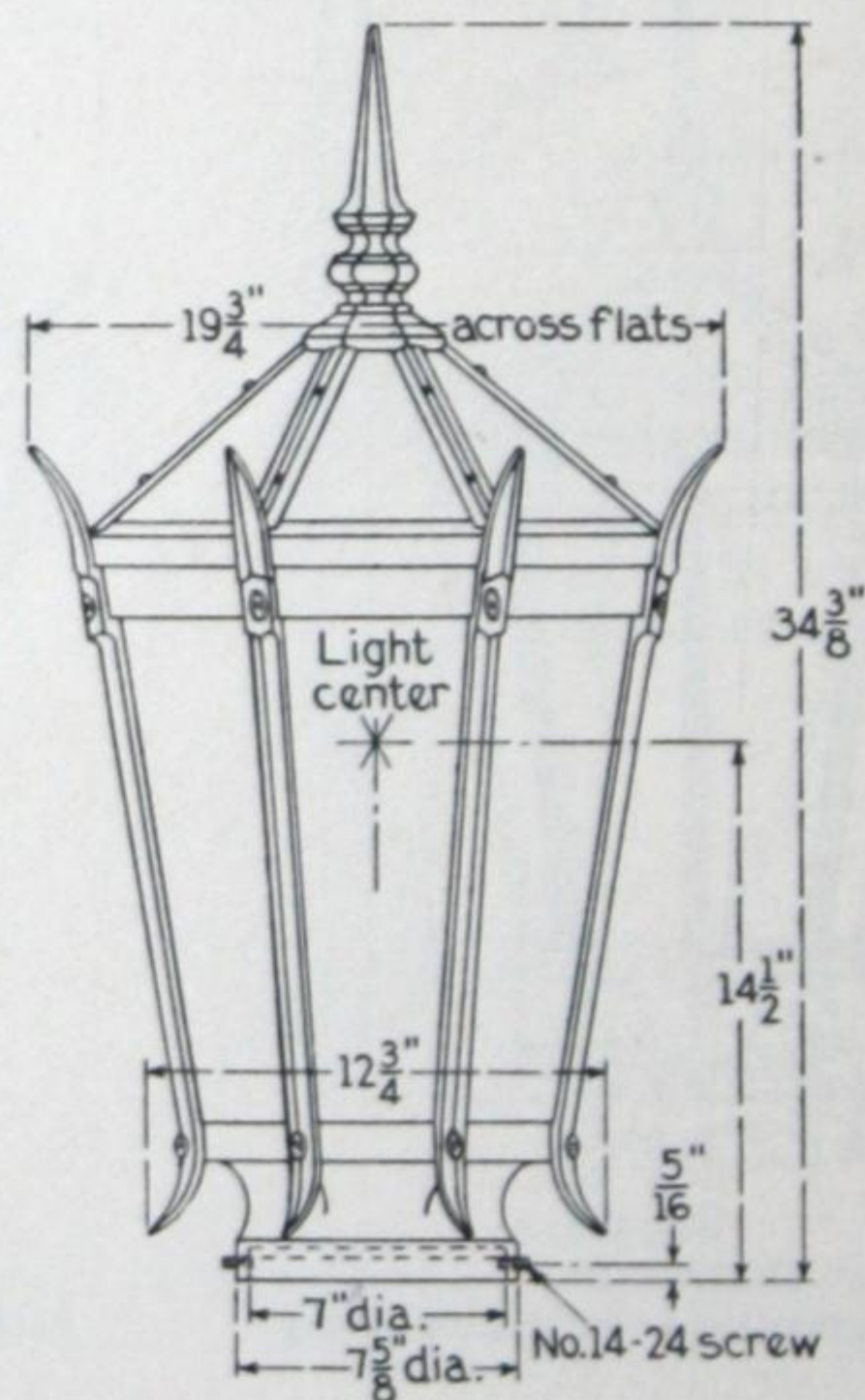


Fig. 49

(K-4867292)

Form 56 luminaire, glass canopy with spurs

G-E NOVALUX ORNAMENTAL LUMINAIRES

PRICES

LUMINAIRES WITHOUT REFRACTORS

FOR USE WITH REFRACTORS, SEE PAGE 92

GLOBE NO.	CANOPY NO.	ILLUS- TRATION FIG. NO. P 75-81 INCL	LUMI- NAIRE FORM NO.	CAS- ING FORM NO.	Straight Series Type for All Series Circuits			Straight Multiple or IL Transformer Type				APPRX WT IN LB	
					LAMP RATING in Lumens	CAT. NO. COM- PLETE LUMI- NAIRE	LIST PRICE Class GO-51	LAMP RATING		CAT. NO. COM- PLETE LUMI- NAIRE	LIST PRICE Class GO-51	Ship.	Net
								Multiple Lamps Watts	Series Lamps Lumens				
37 Genco	*1037 Genco	..	9	E	2500	205947	\$39.40	500 to 1000		205955	\$37.70	70	47
		..	12	N	to	221583	39.40	500 to 1000	4000	221603	37.70	78	53
		..	16	O	10000	245985	39.40	500 to 1000	to 10000	245989	37.70	77	49
		..	33	71		64X687	30.70	300 to 500		64X690	29.00	42	23
39 Genco	*1039 Genco	..	8	F	2500	205919	35.00	200		205931	33.10	43	31
		..	8	F	to	205920	35.00	300 to 500	4000 to 10000	205937	33.30	43	31
		..	8	K	10000	269511	35.00	200		205932	33.10	43	31
		..	13	K		269505	35.00	300 to 500	4000	205938	33.30	43	31
		..	13	12K		64X688	26.30	500	to 10000	269547	33.30	41	31
		..	33	72						269541	33.30	41	31
103 Polycase	1103 Polycase	..	8	3	2500	246419	55.95	200		246423	54.05	66	35
		..	8	3	to	246420	55.95	300 to 500	4000 to 10000	246425	54.25	66	35
		..	8	2K	10000	64X689	47.25	200		246424	54.05	66	35
		..	33	73				300 to 500	4000 to 10000	246426	54.25	66	35
107 M.A.R.	*1107 M.A.R.	7	9	E	2500	246451	39.40	300	4000	246455	37.70	70	47
		..	16	O	to	246361	39.40	to	to	246363	37.70	76	49
		..	33	71	15000	64X649	30.70	1000	15000	64X651	29.00	42	23
		..	3	F		246433	35.00	200		246441	33.10	43	32
109 M.A.R.	*1109 M.A.R.	3	8	F	2500	246434	35.00	300 to 500	4000 to 10000	246445	33.30	43	32
		3	8	K	to	269507	35.00	200		246442	33.10	43	32
		15	13	K	10000	269501	35.00	300	4000	246446	33.30	43	32
		15	13	12K		64X653	26.30	to 500	10000	269543	33.30	41	32
		..	33	72						269537	33.30	41	32
		..	33	72						64X655	24.60	33	18
118 M.A.R.	*1118 M.A.R.	8	9	E	2500	270293	45.60			270295	43.90	78	52
		14	12	N	to	258981	45.60	300	4000	258989	43.90	87	58
		17	16	O	15000	258894	45.60	to	to	258898	43.90	87	54
		23	27	21		289989	45.60	1000	15000	289995	43.90	83	58
123 M.A.R.	1123 M.A.R.	5	8	3	2500	257665	54.35			257681	52.65	66	36
		5	8	2K	to	257667	54.35	300	4000	257683	52.65	66	36
		13	12	O	10000	257689	54.35	to	to	257697	52.65	91	52
		28	33	73		64X669	45.65	500	10000	64X671	43.95	51	22
123 M.A.R.	1123 M.A.R.	6	8	3	2500	69X144	54.35	300	4000	69X148	52.65	66	40
		6	8	2K	to	69X145	54.35	to	to	69X149	52.65	66	40
		30	12	O	10000	69X152	54.35	500	10000	69X154	52.65	91	56
		..	33	73		69X160	45.65			69X162	43.95	51	26
124 M.A.R.	1124 M.A.R.	13	12	M	2500 to 15000	257691	70.20	300 to 1000	4000 to 15000	257699	68.50	98	57
		28	33	72	2500 to 15000	64X661	61.50	300 to 1000	4000 to 15000	64X663	59.80	80	27
124 M.A.R.	1124 M.A.R.	11	12	M	2500 to 15000	69X156	70.20	300 to 1000	4000 to 15000	69X158	68.50	98	63
		30	33	72	2500 to 15000	69X164	61.50	300 to 1000	4000 to 15000	69X166	59.80	80	33
126A M.A.R.	1126 M.A.R.	12	12	19	.....	.....	.....	1500 or 2000	.....	21X143	85.40	110	65
		12	12	19	.....	.....	.....	.....	{ 25000 with Series Socket }	21X144	85.40	110	65
127 M.A.R.	*1127 M.A.R.	4	8	F	2500	290083	39.80	200		290131	37.90	52	36
		4	8	F	to	290084	39.80	300 to 500	4000 to 10000	290091	38.10	52	36
		4	8	K	10000	64X608	39.86	200		290132	37.90	52	36
		14	12	M		290656	39.80	300	4000	290092	38.10	52	36
		16	13	13		290648	39.80	to	to	64X610	38.10	60	52
		26	33	12K		64X657	31.10	500	10000	290690	38.10	50	36
128 M.A.R.	*1128 M.A.R.	4	8	F	2500	290081	37.55	200		290684	38.10	50	36
		4	8	F	to	290082	37.55	300 to 500	4000 to 10000	64X659	29.40	43	22
		4	8	K	10000	290662	37.55	200		290125	35.65	48	34
		..	13	K		290654	37.55	300	4000	290099	35.85	48	34
		25	33	12K		64X699	28.85	to 500	10000	290126	35.65	48	34
		..	33	72						290100	35.85	48	34

M.A.R. = Medium alabaster rippled.

For footnotes, see page 93 and special features, pages 93 and 94.

For dimensions, see pages 83-90 inc., and for description see page 74.

G-E NOVALUX ORNAMENTAL LUMINAIRES

PRICES (Cont)

LUMINAIRES WITH REFRACTOR HOLDERS BUT LESS REFRACTORS

FOR ADDITIONS FOR REFRACTORS, SEE PAGE 93

GLOBE NO.	CANOPY NO.	ILLUS- TRA- TION FIG. NO. P 75-81 INCL.	LUMI- NAIRE FORM NO.	CAS- ING FORM NO.	Straight Series Type for All Series Circuits			Straight Multiple or IL Transformer Type				APPRX WT IN LB	
					LAMP RATING in Lumens	CAT. NO. COM- PLETE LUMI- NAIRE	LIST PRICE Class GO-51	LAMP RATING		CAT. NO. COM- PLETE LUMI- NAIRE	LIST PRICE Class GO-51	Ship.	Net
								Multiple Lamps Watts	Series Lamps Lumens				
107 L.A.R.	*1107 L.A.R.	7 25	9 16 33	E O 71	2500 to 10000	64X598 64X622 64X650	\$40.40 40.40 31.70	300 to 500	4000 to 10000	64X600 64X624 64X652	\$38.70 38.70 30.00	70 76 42	47 49 23
109 L.A.R.	*1109 L.A.R.	3 3 15 15 ..	8 8 13 13 33	F K 13 12K 72	2500 to 10000	64X586 64X587 64X614 64X615 64X654	36.00 36.00 36.00 36.00 27.30	300 to 500	4000 to 10000	64X592 64X593 64X618 64X619 64X656	34.30 34.30 34.30 34.30 25.60	43 43 41 41 33	32 32 32 32 18
118 L.A.R.	*1118 L.A.R.	8 14 17 23 27	9 12 16 27 33	E N O 21 71	2500 to 10000	64X599 64X604 64X623 64X643 64X646	46.60 46.60 46.60 46.60 37.90	300 to 500	4000 to 10000	64X601 64X607 64X625 64X644 64X648	44.90 44.90 44.90 44.90 36.20	78 87 87 83 51	52 58 54 58 28
123 L.A.R.	1123 L.A.R.	5 5 13 28	8 8 12 33	3 2K O 73	2500 to 10000	64X588 64X589 64X602 64X670	55.35 55.35 55.35 46.65	300 to 500	4000 to 10000	64X594 64X595 64X605 64X672	53.65 53.65 53.65 44.95	66 66 91 51	36 36 52 22
123 L.A.R.	1123 L.A.R.	6 6 .. 30	8 8 12 33	3 2K O 73	2500 to 10000	69X146 69X147 69X153 69X161	55.35 55.35 55.35 46.65	300 to 500	4000 to 10000	69X150 69X151 69X155 69X163	53.65 53.65 53.65 44.95	66 66 91 51	40 40 56 26
124 L.A.R.	1124 L.A.R.	13 28	12 33	M 72	2500 to 10000 2500 to 10000	64X603 64X662	71.20 62.50	300 to 500 300 to 500	4000 to 10000 4000 to 10000	64X606 64X664	69.50 60.80	98 80	57 27
124 L.A.R.	1124 L.A.R.	11 30	12 33	M 72	2500 to 10000 2500 to 10000	69X157 69X165	71.20 62.50	300 to 500 300 to 500	4000 to 10000 4000 to 10000	69X159 69X167	69.50 60.80	98 80	63 33
127 L.A.R.	*1127 L.A.R.	4 4 14 16 16 26	8 8 12 13 13 33	F K M 13 12K 72	2500 to 10000	64X590 64X591 64X609 64X616 64X617 64X658	40.80 40.80 40.80 40.80 40.80 32.10	300 to 500	4000 to 10000	64X596 64X597 64X611 64X620 64X621 64X660	39.10 39.10 39.10 39.10 39.10 30.40	52 52 60 50 50 43	36 36 52 36 36 22

Lantern-type Luminaires

LUMINAIRES WITHOUT REFRACTORS

FOR USE WITH REFRACTORS, SEE PAGE 93

GLASSWARE	ILLUS- TRA- TION FIG. NO. P 79-82 INCL.	DIMEN- SION FIG. NO. P 86-90 INCL.	LUMI- NAIRE FORM NO.	CASING FORM NO.	Straight Series Type for All Series Circuits			Straight Multiple or IL Transformer Type				APPRX WT IN LB	
					LAMP RATING in Lumens	CAT. NO. COM- PLETE LUMINAIRE	LIST PRICE Class GO-51	LAMP RATING		CAT. NO. COM- PLETE LUMINAIRE	LIST PRICE Class GO-51	Ship.	Net
								Watts	Lumens				
Reflector only	19	26	17	6-in.	1000 to 2500	64X626	\$59.50	.....	.....	.....	.....	79	44
166 M.A.R.	20	27	17	pole top	2500 to 6000	64X627	68.10	.....	.....	.....	.....	81	49
	21	29	18A	S	2500 to 15000	246132	68.00	300 to 750	4000 to 10000	246140	\$66.30	100	64
	21	29	18A	SK	2500 to 15000	246134	68.00	300 to 750	4000 to 10000	246142	66.30	100	64
	21	30	18B	R	2500	246146	78.50	300	4000	246158	76.80	130	
	..	32	18B	RW	to	246148	78.50	to	to	246160	76.80	130	
	21	31	18B	RK	15000	246150	78.50	1000	15000	246162	76.80	130	
Granite Opalescent Pressed Glass Panels	22	33	19A	{ 1 1/4-in. pipe tap }	2500 to 15000	19X578	68.00	300 to 750	.....	16X926	66.30	100	70
	22	34	19B	{ 1 1/4-in. pipe tap }	2500 to 15000	19X582	78.50	300 to 500	.....	16X930	76.80	130	
	22	34	19B	{ 1 1/4-in. pipe tap }	.....	.....	.....	750 to 1000	.....	16X934	76.60	130	
	29	44	33A	59	2500 to 15000	29X242	59.30	300 to 750	4000 to 10000	29X252	57.60	95	65
	29	45	33B	60	2500 to 15000	29X269	69.80	300 to 1000	4000 to 10000	29X292	68.10	125	
	32	48	56	7-in.	2500	3732066G42	79.30	300	4000	3732066G47	77.60	63	33
	..	..	56	R	to	3732066G92	88.00	to	to	3732066G97	86.30	63	33
	..	..	56	K	15000	3732066G146	88.00	750	10000	3732066G151	86.30	63	33

L.A.R. = Light alabaster rippled. M.A.R. = Medium alabaster rippled.

For footnotes, see page 93 and special features, pages 93 and 94.

For dimensions, see pages 83-90 inc., and for description see page 74.

G-E NOVALUX ORNAMENTAL LUMINAIRES

PRICES (Cont)

Lantern-type Luminaires

LUMINAIRES WITH REFRACTOR HOLDERS BUT LESS REFRACTORS

FOR ADDITIONS FOR REFRACTORS, SEE AT BOTTOM OF PAGE

GLASSWARE	ILLUS- TRA- TION FIG. NO. P 79-82 INCL.	DIMEN- SION FIG. NO. P 86-90 INCL.	LUMI- NAIRE FORM NO.	CASING FORM NO.	Straight Series Type for All Series Circuits			Straight Multiple or IL Transformer Type				APPRX WT IN LB	
					LAMP RATING in Lumens	CAT. NO. COMPLETE LUMINAIRE	† LIST PRICE Class GO-51	LAMP RATING		CAT. NO. COMPLETE LUMINAIRE	† LIST PRICE Class GO-51	Ship.	Net
								Watts	Lumens				
Reflector only†	..	..	17	{ 6-in. pole top }	2500 to 6000	64X628	\$62.50	.....	.....	.....	.....	79	44
	21	29	18A	S	2500 to 10000	64X629	69.00	300 to 500	4000 to 10000	64X631	\$67.30	100	64
	21	29	18A	SK	2500 to 10000	64X630	69.00	300 to 500	4000 to 10000	64X632	67.30	100	64
	21	30	18B	R	2500	64X633	79.50	300	4000	64X636	77.80	130	
	..	32	18B	RW	to	64X635	79.50	to	to	64X638	77.80	130	
	21	31	18B	RK	10000	64X634	79.50	500	10000	64X637	77.80	130	
	22	33	19A	{ 1 1/4-in. pipe tap }	2500 to 10000	64X640	69.00	300 to 500	.....	64X639	67.30	100	70
	22	34	19B	{ 1 1/4-in. pipe tap }	2500 to 10000	64X642	79.50	300 to 500	.....	64X641	77.80	130	
Granite Opalescent Pressed Glass Panels	29	44	33A	59	2500 to 10000	64X683	60.30	300 to 500	4000 to 10000	64X684	58.60	95	65
	29	45	33B	60	2500 to 10000	64X685	70.80	300 to 500	4000 to 10000	64X686	69.10	125	
	31	47	° 38	R	2500	64X680	99.50	300	4000	64X677	97.80	63	38
	..	..	° 38	RW	to	64X681	99.50	to	to	64X678	97.80	68	43
	31	..	° 38	RK	10000	64X682	99.50	500	10000	64X679	97.80	62	37
	32	48	△56	7 in.	2500	3732066G53	80.30	300	4000	3732066G20	78.60	63	33
	..	..	△56	R	to	3732066G55	89.00	to	to	3732066G74	87.30	63	33
	..	..	△56	K	10000	3732066G109	89.00	500	10000	3732066G128	87.30	63	33

† Catalog numbers and prices do not include MAZDA lamps, lighting standards, refractors, or transformers.

* Metal canopies available at same price.

° Form 38 luminaire standard in aluminum. Available in brass; apply to nearest Sales Office.

△ Form 56 luminaire standard in aluminum with glass canopy and with spurs.

L.A.R. = Light alabaster rippled. M.A.R. = Medium alabaster rippled.

For special features, see page 94.

For dimensions see pages 86-90 inc., and for description see page 74.

Renewal-part prices of glassware may be deducted from any luminaire to obtain price, less glassware.

Do not deduct renewal-part prices of parts other than glassware.

Dome refractors may be used in any luminaire listed with a refractor holder. Add the part price of the refractor as follows:

	CAT. NO.	LIST PRICE Class GO-51
Sym-Etric dome refractor, glass collar.....	1340228	\$11.50
Sym-Etric dome refractor, metal collar.	3775686	11.50
A-Sym-Etric dome refractor, metal collar...	2346021	14.00
B-Sym-Etric dome refractor, metal collar...	2346129	14.00

The largest lamp size permissible with refractors is shown on page 189.

Luminaires are furnished with adjustable sockets. For best results, the light center should be adjusted as shown on the dimension drawings or in line with the peep-holes in the globes and refractors.

Autotransformers may be used in the Forms 9, 12, 16, 18B, and 33B, except with No. 123 globe. Add the part price of transformer as listed in section 3067 to the price of the multiple luminaire.

For glass panels, see page 198.

FORM NUMBERS OF CASINGS ADAPTED TO LIGHTING STANDARDS

UNION METAL STEEL	KING CAST IRON	AMERICAN CONCRETE CORPORATION
E	E	59
F	K	60
M	M	71
N	N	72
O	O	73
Q	Q	
R	RK	
RW	SK	
S	2K	
3	12K	
13	19	
19	21	
21		

G-E NOVALUX ORNAMENTAL LUMINAIRES

PRICES (Cont)

SPECIAL FEATURES

LUMINAIRES WITH GLASS GLOBES

Luminaires with No. 103 globes can be furnished with external ribs, and internal supports omitted, at the same price as luminaires listed.

Luminaires can be furnished with No. 161 square globe and No. 1118 canopy at same price as luminaire with No. 118-1118 glassware when a light shield is re-

quired. Light shield for No. 161 globe, Cat. No. 4830956G1. Add \$1.85 to list price.

25,000-lumen Type IL transformers require the use of a series socket. The IL transformer-type, Form 12 luminaire with No. 126 globe, is equipped with a series socket.

Form 33 luminaires are furnished in aluminum as standard. They may be furnished in bronze at an increased list price of \$4.30.

POLE ADAPTER FOR CONCRETE STANDARDS

For mounting Forms 33, 33A, 33B, and 56 with 7-in. casing to pylons or concrete standards with pipe top or Type I fitter, use the pole adapter illustrated in Fig. 46, page 89. Galvanized iron, Cat. No. 2393022, \$2.50 list, Class GO-51. Cast aluminum, Cat. No. 2378294, \$3.50 list,

Class GO-51. The adapter includes mounting screws. When used with series luminaires, the pylon or standard must be recessed to allow the receptacle supports to project below the casing.

LANTERN LUMINAIRES

SPECIAL FEATURE	FORM NO. OF LUMINAIRE							
	18A	18B	19A	19B	33A	33B	38	56
For blown alabaster rippled panels, add to list price	\$20.00	\$17.60	\$20.00	\$17.60	\$20.00	\$17.60		
For galv casing and other castings of aluminum, add to list price	20.00	20.00						
For cast-aluminum luminaire, add to list price			20.00	20.00	20.00	20.00		
For galvanized casing and other castings of bronze, add to list price	40.00	40.00						
For cast-bronze luminaire, add to list price			40.00	40.00	40.00	40.00		\$20.00
For galvanized cast-iron luminaire, add to list price	7.50	7.50	7.50	7.50	7.50	7.50		
Luminaire without spurs at same price	Yes	Yes	Yes	Yes	Yes	Yes		Yes
Metal canopy panels at same price	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Metal canopy at same price								

For Forms 18B and 33B luminaires with autotransformer, add part price of transformer listed on page 180 to list price of multiple-type luminaire.

GLASS PANELS REQUIRED (See page 198)

FORM NO. OF LUMINAIRE	NO. PANELS REQUIRED	DRG NO. OF PANELS			FORM NO. OF LUMINAIRE	NO. PANELS REQUIRED	DRG NO. OF PANELS		
		Side	Canopy	Bottom			Side	Canopy	Bottom
18A	8	1392617	1392618		33A	8	1392617	1392618	
18B	8	1392559	1392557		33B	8	1392559	1392557	
19A	8	1392617	2378511		38	8	2303849	2303850	
	1			1392615	56	8	4888985	4888986	
19B	8	1392559	4893675						
	1			1392558					

FORM 6 G-E NOVALUX EYE-SUSPENSION LUMINAIRES

Eye-suspension luminaires find their widest application in the utilitarian class of lighting. The principal requirement for equipment for this class of lighting is that the best lighting must be obtained at the lowest cost. Lighting luminaires for this service are selected because they give dependable service with low upkeep over a long period of time.



Fig. 1

(Photograph, 272260)

Luminaire with No. 166 light alabaster rippled globe and reflector, Cat. No. 342543

The Form 6 eye-suspension luminaire is recommended for lighting secondary business streets, residential streets, and main thoroughfares where high-intensity illumination is required and overhead wiring is necessary because of economic conditions, or in order to line up with existing overhead lines.

The Form 6 eye-suspension luminaire was designed for use with MAZDA C incandescent lamps. The straight series-type lamps, in 2500-, 4000-, and 6000-lumen sizes, for operation on 6.6-amp constant-current circuits, are most commonly used. Multiple lamps of 300, 400, 500, 750, or 1000 watts can also be used. High-current series lamps in 4000- to 15,000-lumen sizes operate much more efficiently at currents of 15 or 20 amperes than at the lower current of standard series circuits. In order to operate these high-current lamps from standard series circuits of lower current, an autotransformer which is concealed in a casing, or a Type IL series transformer mounted on a pole, can be used or they may be operated on a 15- or 20-amp straight-series circuit.

Several different kinds of globes and refractors can be furnished with this luminaire, and various types of light distribution are obtained by their use. Any of the combinations listed for this luminaire are applicable to the classes of lighting for which the Form 6 luminaire is recommended. Their selection

depends on the particular type of unit and light distribution preferred, also on the requirements to be met.

CONSTRUCTION

In construction, the Form 6 eye-suspension luminaire is very simple. The cover is of cast iron and has binding posts in the top for external wiring. The luminaire is suspended by an insulated eye, and this eye is held by two lugs fastened as part of the cover. On the under side of the cover are secured the autotransformer (if one is used), the receptacle, and the lamp. A spun-copper casing which conceals and protects the autotransformer and receptacle is fastened to the cover by means of a concealed bayonet joint. The lower end of the casing proper has a concealed support for the reflector, refractor, and globe. Felt globe seats are used to make the luminaire insectproof and dustproof. The globes and refractors are hinged to allow easy removal of the lamp.

The Form 6 eye-suspension luminaire is completely enclosed when equipped with a globe, yet the internal temperatures are so low that the life of a lamp is in no way lessened by the enclosure. The advantages of a closed luminaire are obvious; no dust can collect on the lamp bulb or the inner surface of the globe and so reduce the light by possibly as much as 40 per cent, even when the lights are cleaned once a month. The elimination of dust and dirt is a great advance toward higher efficiency and better service. Such a fixture is absolutely weatherproof and insectproof.

ADVANTAGES

1. When an enclosing globe or a closed base-bowl refractor is used, insects and dust cannot collect in the globe and thereby reduce the efficiency of the luminaire.

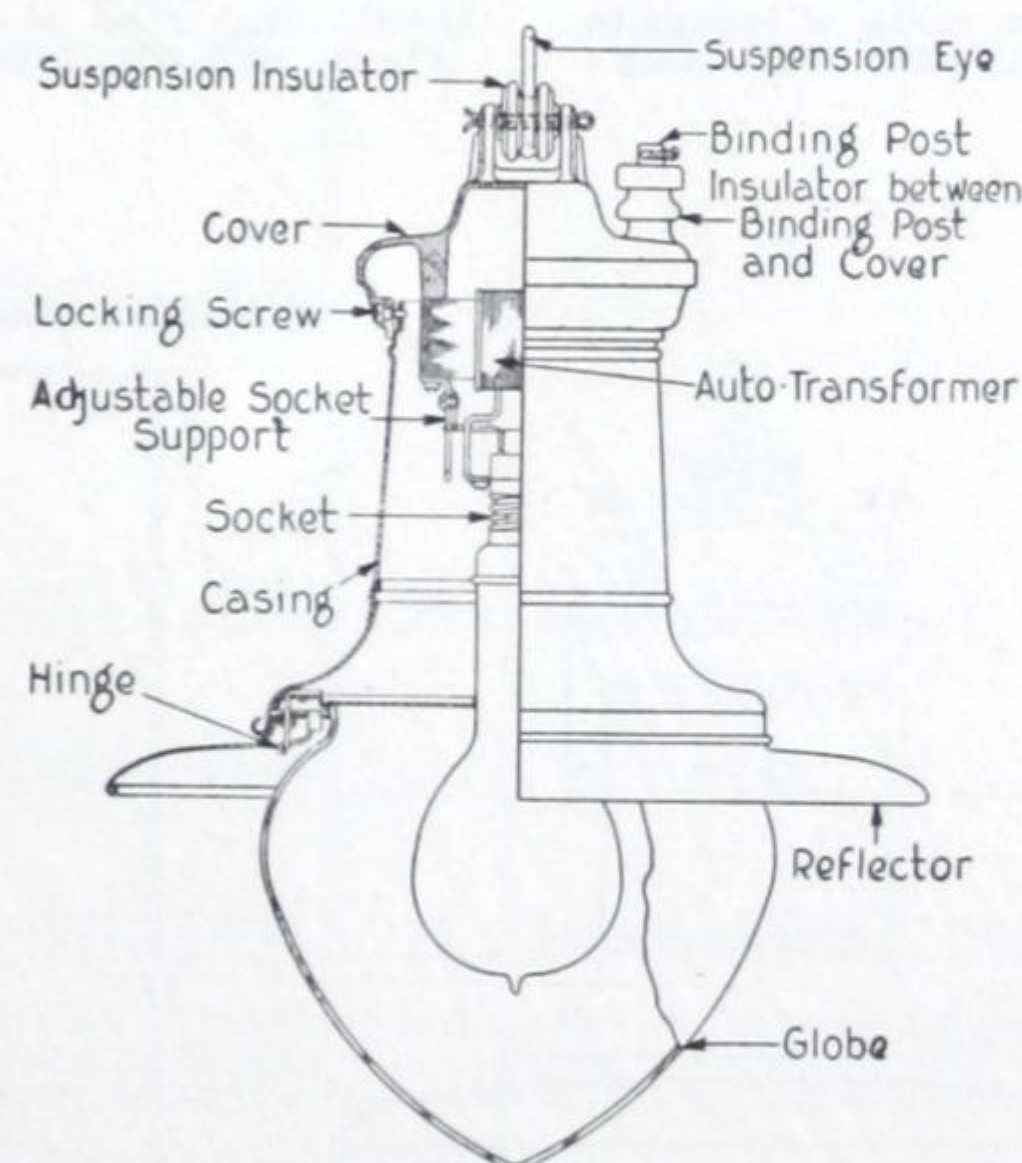


Fig. 2

Section of luminaire with No. 166 globe

2. Rippled glassware produces the required diffusion with high transmission characteristics.

3. Globes and refractors are hinged to provide accessibility for cleaning and relamping.

4. Copper casings are spun, and there are no seams or joints to come apart.

FORM 6 G-E NOVALUX EYE-SUSPENSION LUMINAIRES



Fig. 3
(Photograph 265537)
Luminaire with holophane bowl refractor,
Cat. No. 1340382, and reflector,
Cat. No. 342543



Fig. 4
(Photograph 272646)
Luminaire with No. 116 clear
rippled globe and Holophane dome
refractor, Cat. No. 1340228



Fig. 5
(Photograph 265641)
Luminaire with Holophane band refractor,
Cat. No. 1327401, and reflector,
Cat. No. 342543

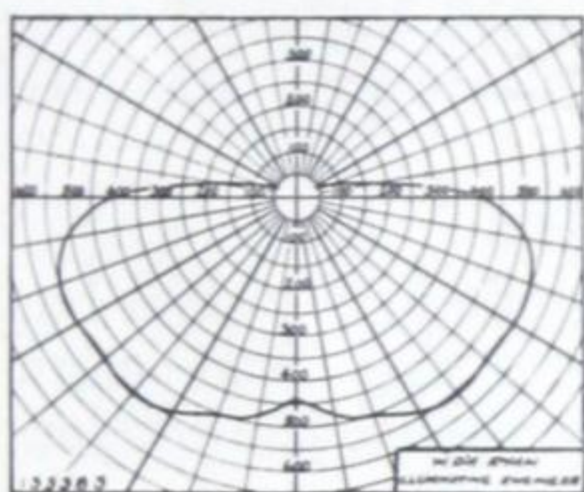


Fig. 6
Distribution curve of luminaire
(Fig. 1) with 6000-lumen lamp

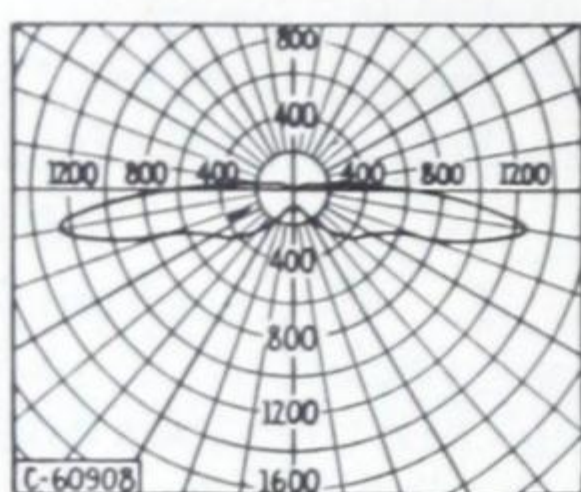


Fig. 7
Distribution curve of luminaire
(Fig. 3) with 6000-lumen lamp

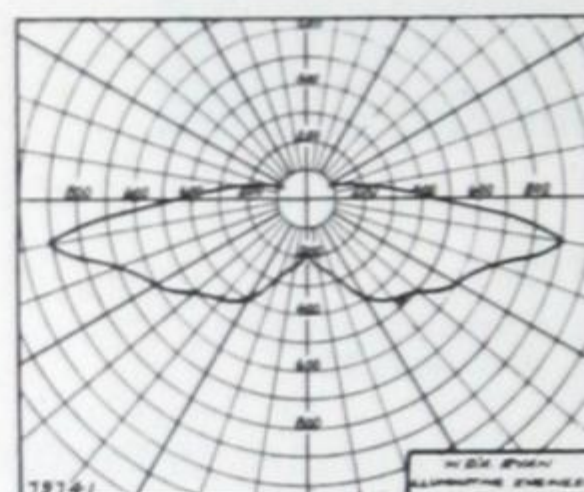


Fig. 8
Distribution curve of luminaire
(Fig. 4) with dome refractor,
Cat. No. 1340228 and
6000-lumen lamp

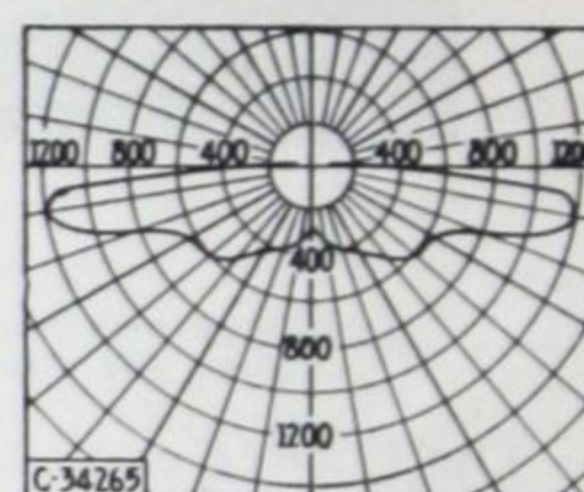


Fig. 9
Distribution curve of luminaire
(Fig. 5) with 6000-lumen lamp

DIMENSIONS

(Dimensions Approximate Only—Not for Construction)

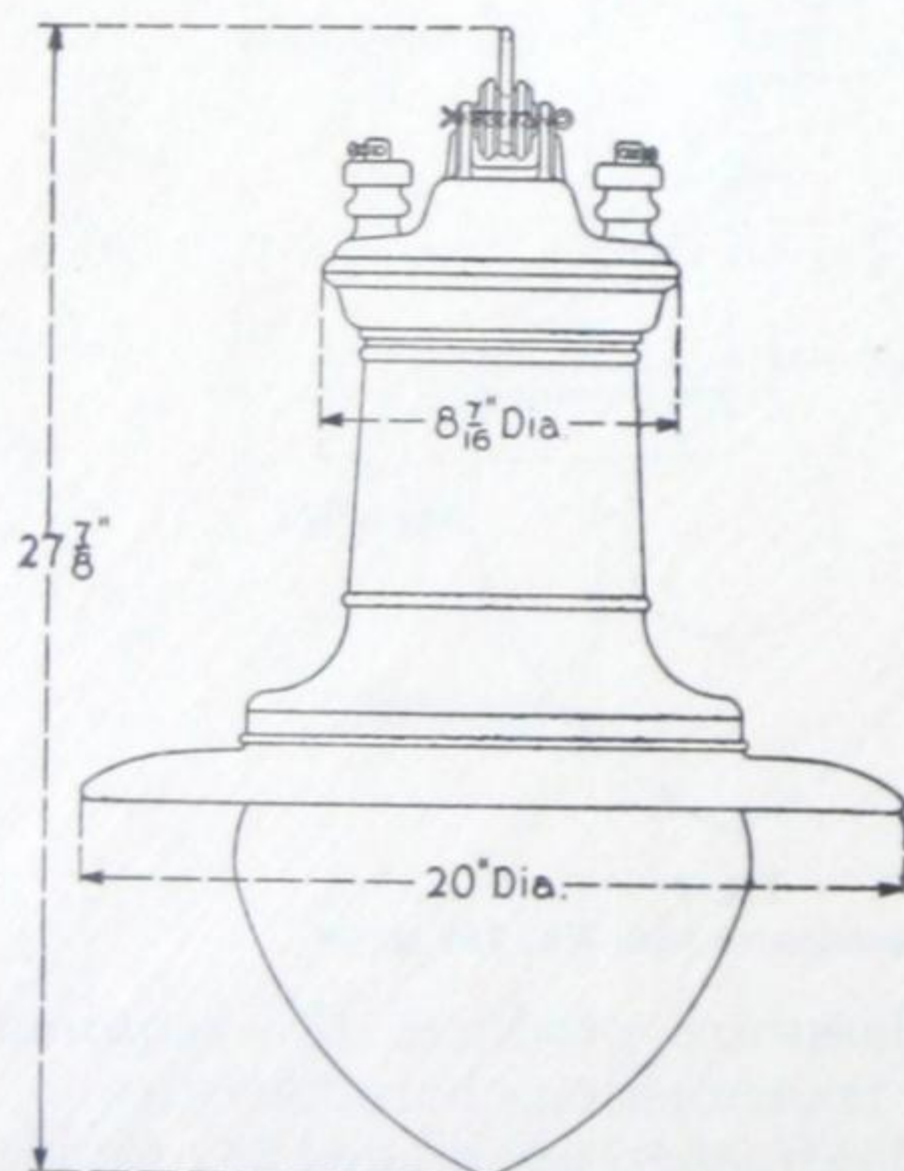


Fig. 10
Luminaire with No. 166 globe
and reflector

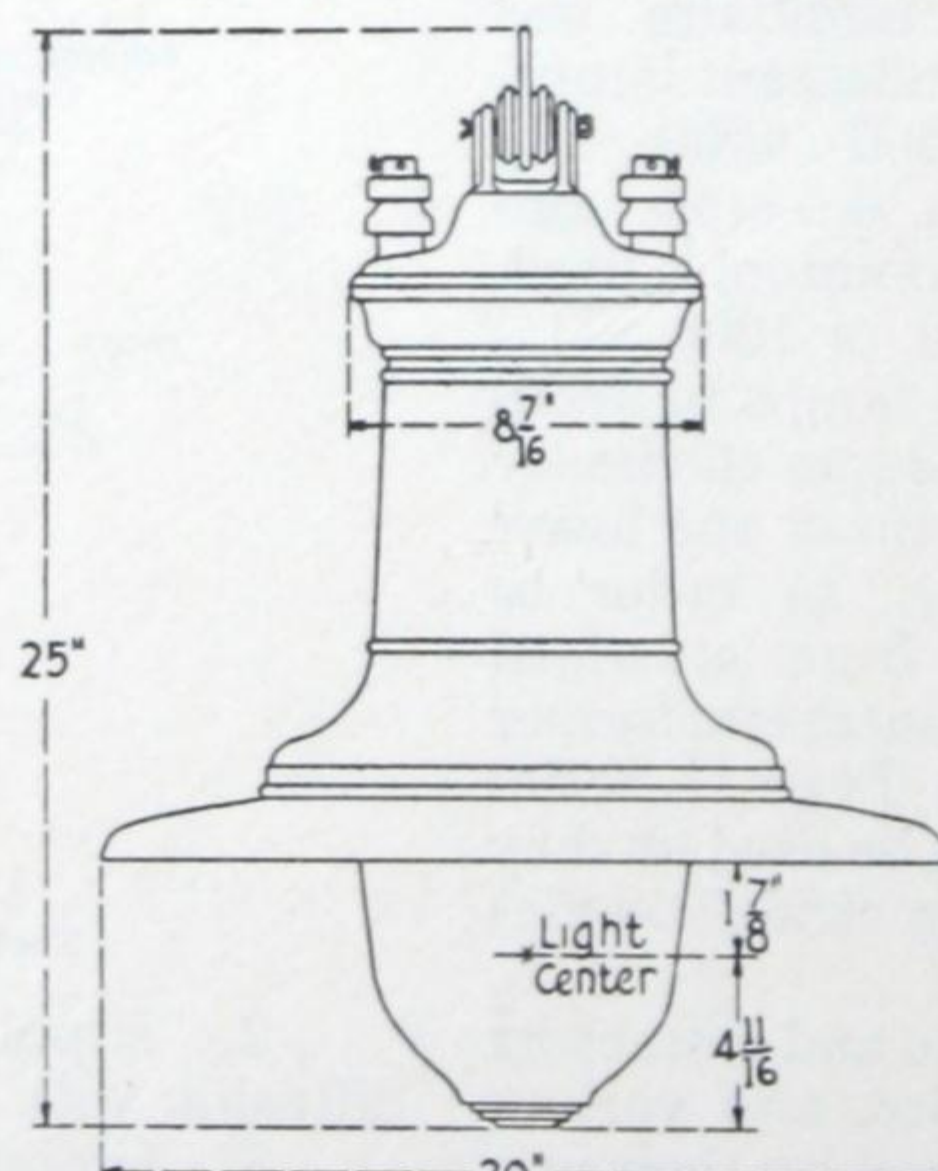


Fig. 11
Luminaire with bowl refractor

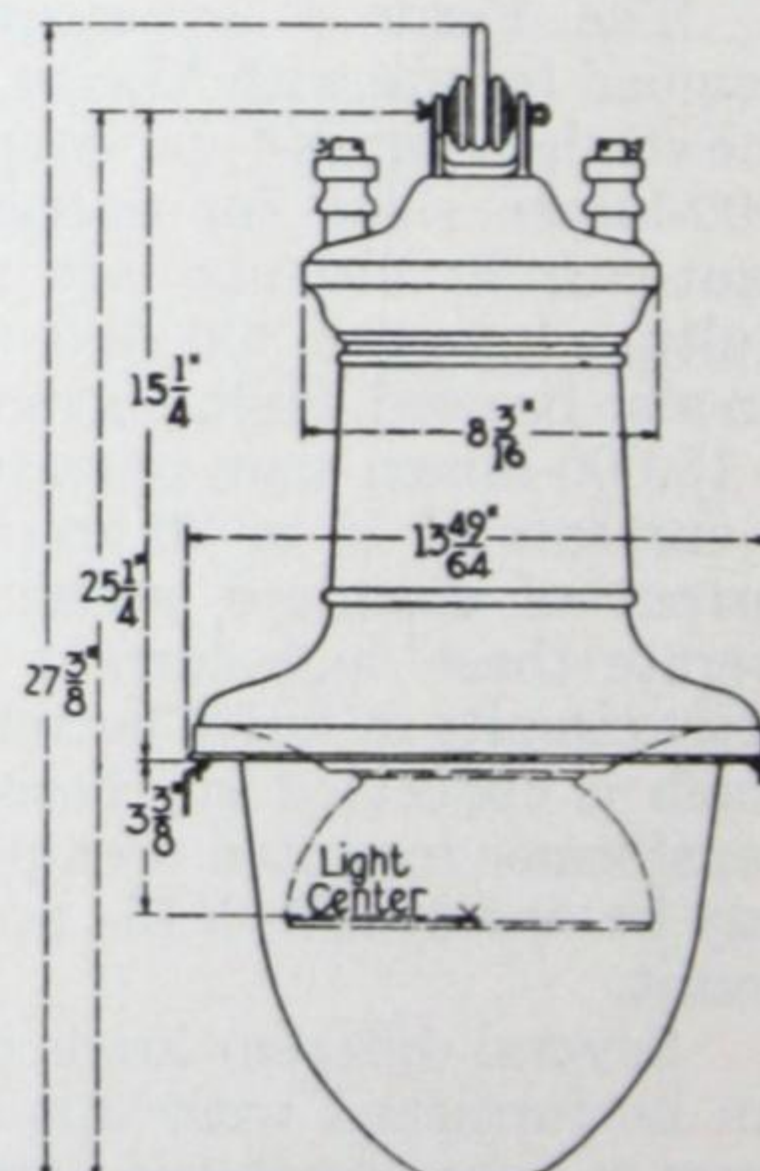


Fig. 12
Luminaire with No. 116 globe

FORM 6 G-E NOVALUX EYE-SUSPENSION LUMINAIRES

STRAIGHT SERIES, STRAIGHT MULTIPLE, AND †IL SERIES TRANSFORMER TYPES

GREEN FINISH

EQUIPPED WITH	Fig. No.	STRAIGHT SERIES TYPE 2500, 4000, AND 6000 LUMENS, 5.5, 6.5, AND 7.5 AMP		STRAIGHT MULTIPLE TYPE 300- AND 500-WATT † IL TRANSFORMER TYPE 4000 LUMENS, 15 AMP 6000 AND 10,000 LUMENS, 20 AMP		Approx Ship. Wt in Lb
		*Cat. No. (Luminaire Complete)	*List Price Class GO- 51	*Cat. No. (Luminaire Complete)	*List Price Class GO- 51	
No. 116 Light Alabaster Rippled Globe and Sym-Etric Dome Refractor, Cat. No. 1340228.....	4	248246	\$47.90	°248248	\$46.20	65
No. 116 Light Alabaster Rippled Globe and Sym-Etric Dome Refractor, Cat. No. 3775686.....	4	61X710	47.90	61X712	46.20	65
No. 166 Light Alabaster Rippled Globe and Reflector, Cat. No. 342543.....	1	260419	40.70	260429	39.00	40
No. 166 Light Alabaster Rippled Globe, Reflector, Cat. No. 342543, and Sym-Etric Dome Refractor, Cat. No. 1340228.....	1	260421	53.20	°260431	51.50	50
No. 166 Light Alabaster Rippled Globe, Reflector, Cat. No. 342543, and Sym-Etric Dome Refractor, Cat. No. 3775686.....	1	61X711	53.20	61X713	51.50	50
Sym-Etric Bowl Refractor, Cat. No. 1340382 and Reflector Cat. No. 342543	3	170522	46.60	‡ 202203	44.90	35
Band Refractor, Cat. No. 1327401, and Reflector, Cat. No. 342543.....	5	202208	44.70	202204	43.00	30

AUTOTRANSFORMER TYPES

§ For 60-cycle Series Circuits

EQUIPPED WITH	Fig. No.	4000 LUMENS				6000 LUMENS (With Tap for 4000 Lumens)				10,000 LUMENS (With Tap for 6000 Lumens)				Ap- prox Ship. Wt in Lb
		Lamp Rating in Amp	*CAT. NO. OF LUMI- NAIRE COMPLETE WITH \$ AUTO- TRANSFORMER		* List Price Class GO-51	Lamp Rating in Amp	*CAT. NO. OF LUMI- NAIRE COMPLETE WITH \$ AUTO- TRANSFORMER		* List Price Class GO-51	Lamp Rating in Amp	*CAT. NO. OF LUMI- NAIRE COMPLETE WITH \$ AUTO- TRANSFORMER		* List Price Class GO-51	
			For 6.6-amp Circuits	For 7.5-amp Circuits			For 6.6-amp Circuits	For 7.5-amp Circuits			For 6.6-amp Circuits	For 7.5-amp Circuits		
No. 116 Light Alabaster Rippled Globe and Sym-Etric Dome Refractor, Cat. No. 1340228.....	4	15	248249	248252	\$59.70	20	248250	248253	\$62.70					75
No. 116 Light Alabaster Rippled Globe and Sym-Etric Dome Refractor, Cat. No. 3775686.....	4	15	61X714	61X717	59.70	20	61X715	61X718	62.70	20	61X716	61X719	\$65.90	75
No. 166 Light Alabaster Rippled Globe and Reflector, Cat. No. 342543	1	15	260438	260441	52.50	20	260439	260442	55.50	20	260440	260443	58.70	50
No. 166 Light Alabaster Rippled Globe Reflector, Cat.No. 342543,and Dome Refractor, Cat. No. 1340228.	1	15	260450	260453	65.00	20	260451	260454	68.00					60
No. 166 Light Alabaster Rippled Globe Reflector, Cat. No. 342543, and Sym-Etric Dome Refractor, Cat. No. 3775686.....	1	15	61X720	61X723	65.00	20	61X721	61X724	68.00	20	61X722	61X725	71.20	60
Bowl Refractor, Cat. No. 1340382 and Reflector, Cat. No. 342543.....	3	15	170534	170561	58.40	20	170546	171864	61.40					45
Band Refractor, Cat. No. 1327401 and Reflector, Cat. No. 342543.....	5	15	202215	202217	56.50	20	202219	202221	59.50	20	202223	202225	62.70	40

* Prices and catalog numbers do not include MAZDA lamps.

† For use with, but not including, a Type IL series transformer, aerial type, which may be mounted on the cross of the nearest pole.

‡ 500-watt multiple and 10,000-lumen series lamps are not recommended with bowl refractor.

§ Special autotransformers can be furnished for any alternating-current series circuit from 3 to 10 amperes, 25 to 133 cycles at an increased price.

|| Maximum lamp size 300-watt or 6000-lumen.

For Straight Series or Autotransformer Bracket-type Luminaires order similar to the above except with high-voltage insulator and hood for 1¼-in. or 2-in. pipe and add \$10.00 list to the price of the pendent luminaire.

For Straight Multiple or IL Transformer Bracket-type Luminaires order similar to the above except with hood for 1¼-in. or 2-in. pipe and use the price of the eye-suspension luminaire.

"Renewal Part" prices may be deducted for omission of glassware. Do not deduct part prices for omission of other parts.

For luminaire with No. 87 diffusing globe, order similar to Cat. No. of 166 globe luminaire and use same price.

FORM 25 G-E NOVALUX SUSPENSION LUMINAIRES



Fig. 1
(Photograph 271346)
Form 25 Novalux luminaire



Fig. 2
(Photograph 271345)
Form 25 Novalux luminaire with globe open

APPLICATION

The Form 25 luminaire has been designed particularly for residential districts where the following conditions exist:

1. Surroundings which justify an ornamental treatment.
2. Wide streets requiring curb mounting rather than center suspension.
3. Long spacing and high mounting to economize in the number of units.

No other luminaire so well meets all these requirements.

The appearance is very pleasing. To the casual observer, the luminaire appears to have a sectional paneled globe. Actually, the construction involves only a one-piece rippled-glass globe supported by a basket formed of copper bands. The rippled outer surface of the clear crystal globe not only induces a certain amount of diffusion but also gives life and sparkle to the light. This is noticeable in the daytime when the rippling catches the sunlight and gives the effect of innumerable, minute prisms.

The bracket type of mounting increases the utilization of light on the street and reduces the likelihood of interference from overhanging tree foliage. Likewise, lamps placed over the street illuminate both curbstone faces and assist in outlining the boundaries of the pavement. Such an arrangement provides a much better distribution over the entire surface, particularly on wide streets, than a system of similar luminaires suspended over the center of the street.

The extent of a residential district is so great that efficiency in light utilization assumes serious proportions. With staggered luminaires, the spacing on each side of the street should be between 250 and 400 ft. The mounting height should be between 16 and 20 ft, depending upon the importance of the thoroughfare from a traffic standpoint and the

conditions of the tree foliage. This height will remove the light source from the normal range of vision of pedestrians and drivers and will reduce the possibility of glare. At this spacing and mounting height, the dome refractor provides a distribution of light which is admirably adapted to the requirements of residential streets.

Form 25A—No. 116 Light Alabaster Rippled Globe, SYM-ETRIC, A-SYM-ETRIC Dome or B-SYM-ETRIC Dome Refractor.

Mounting height—16 ft approximately. Spacing—250 to 300 ft. Lamps—100- to 500-watt multiple or, 1000-lumen, straight series.

Form 25B—No. 108 Light Alabaster Rippled Globe, SYM-ETRIC, A-SYM-ETRIC Dome or B-SYM-ETRIC Dome Refractor.

Mounting height—20 ft approximately. Spacing—300 to 400 ft. Lamps—300- or 500-watt multiple, or 4000-, 6000-, and 10,000-lumen straight series or IL transformer types.

CONSTRUCTION

The top of the Form 25 luminaire is a single iron casting which supports the socket and porcelain enameled reflector and to which the copper basket is hinged. The reflector also serves as a holder for the Holophane dome refractor. The globe is held in the basket and seats against a felt gasket to prevent the accumulation of dust or insects on the inside of the unit. No ventilation is provided, because its dimensions are such that even with the largest lamps the heat is safely dissipated by radiation. The size and arrangement of the five panels forming the basket are such that they do not materially reduce the useful light on the street. They serve to break up the area of the globe into sections and prevent a sharp contrast in surface intensity when clear or light alabaster rippled globes are used.

The top casting of the luminaire is tapped to screw on the end of a 1¼-in. pipe.

FORM 25 G-E NOVALUX SUSPENSION LUMINAIRES

Bracket Suspension

STRAIGHT SERIES, STRAIGHT MULTIPLE, AND *IL TRANSFORMER TYPES

GREEN FINISH

EQUIPPED WITH	STRAIGHT SERIES TYPE For 5.5-, 6.6-, or 7.5-amp Series Circuits			STRAIGHT MULTIPLE TYPE For Multiple Circuits			*IL SERIES TRANS- FORMER TYPE For Series Circuits			Approx Ship. Wt in Lb
	Lamp Rating in Lumens	† Cat. No. of Com- plete Lumi- naire	† List Price Class GO-51	Lamp Rating in Watts	† Cat. No. of Com- plete Lumi- naire	† List Price Class GO-51	Lamp Rating in Lumens	† Cat. No. of Com- plete Lumi- naire	† List Price Class GO-51	

FORM 25A SMALL BASKET LUMINAIRE

No. 116 Light Alabaster Rippled Globe	1000	256724	\$49.00	100 or 150	256725	\$47.30	4000	43X52	\$47.30	66
				200	256726		or			
				300	256727		6000			
With Dome Refractor, Cat. No. 3775686.....										
With A-SYM-ETRIC Dome Refractor, Cat. No. 2346021	1000	280469	51.50	100 or 150	280470	49.80	4000	43X53	49.80	66
				200	280471		6000			
				300 or 500	280472		or			
With B-SYM-ETRIC Dome Refractor, Cat. No. 2346129	1000	4X391	51.50	100 or 150	4X392	49.80	4000	43X54	49.80	66
				200	4X393		6000			
				300 or 500	4X394		or			

FORM 25B LARGE BASKET LUMINAIRE

No. 108 Light Alabaster Rippled Globe	2500, 4000 or 6000	256731	\$52.50	300	256732	\$50.80	4000 or	258415	\$50.80	70
							6000			
With Dome Refractor, Cat. No. 3775686.....										
With A-SYM-ETRIC Dome Refractor, Cat. No. 2346021	2500, 4000 or 6000	285539	55.00	300 or 500	285540	53.30	4000	285541	53.30	70
							6000			
							or			
With B-SYM-ETRIC Dome Refractor, Cat. No. 2346129	2500, 4000 or 6000	4X411	55.00	300 or 500	4X412	53.30	4000	4X413	53.30	70
							6000			
							or			

* For use with, but not including, a Type IL series transformer, which should be mounted on the base of the pole or in a manhole, or buried directly in the ground.

† Cat. No. and prices do not include MAZDA lamp or pole.

Canopies of above luminaires are cast iron. For aluminum canopies add to above list prices: \$7.50 for Form 25A and \$9.50 for Form 25B luminaires.

"Renewal Part" prices may be deducted for omission of glassware. Do not deduct part prices for omission of other parts.

Description and typical distribution curves of refractors are given on pages 184 and 185.

DIMENSIONS

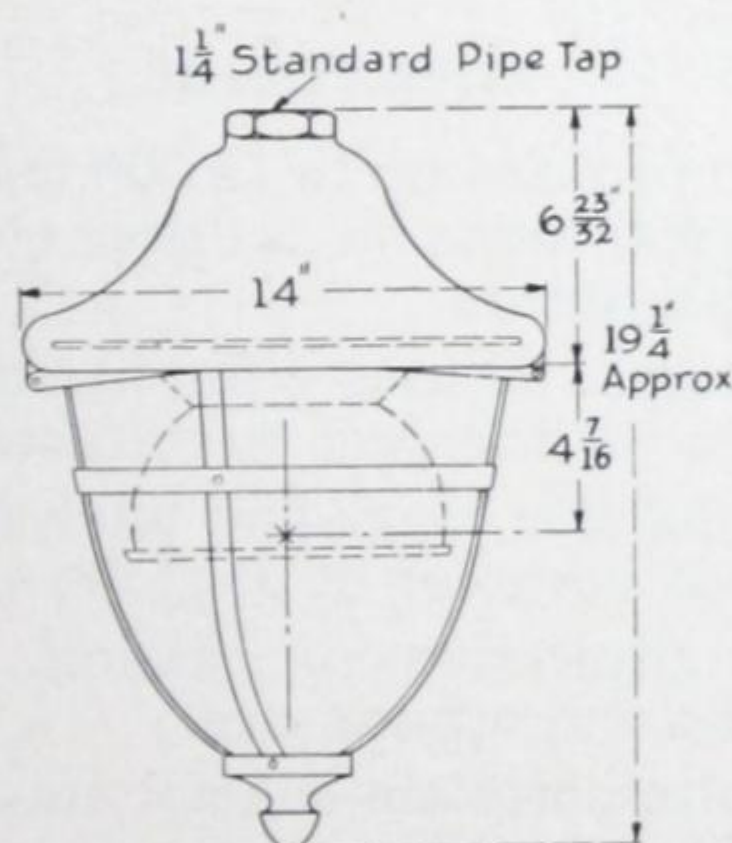


Fig. 3
(K-1279325)

Form 25A luminaire with No. 116 globe
and dome refractor

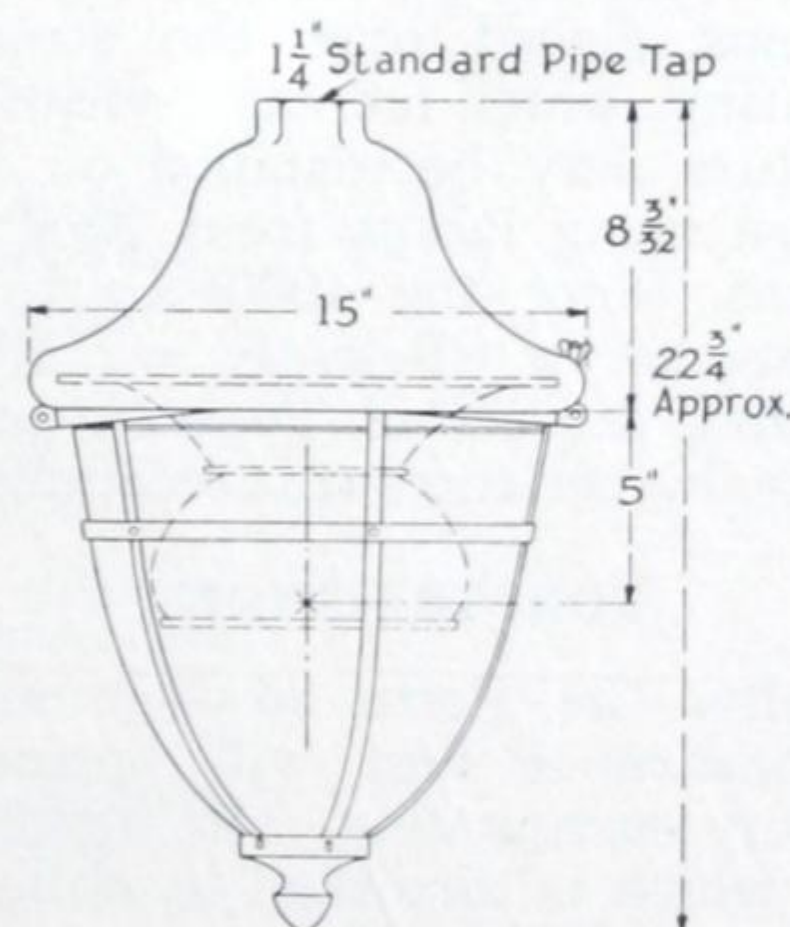


Fig. 4
(K-3706045)

Form 25B luminaire with No. 108 globe
and dome refractor

FORM 25-C G-E NOVALUX SUSPENSION LUMINAIRE

FOR OPERATION ON MULTIPLE AND SERIES CIRCUITS UP TO 5000 VOLTS

The Form 25-C Novalux suspension luminaire is an ornamental suspension fixture in which lamps up to 500-watt multiple and 15,000-lumen series may be used. This fixture is applicable on boulevards, main thoroughfares, highways, better residential sections, and any other place requiring a pendent unit with excellent appearance and high efficiency.

green painted, cast iron galvanized, or cast aluminum in natural finish. The socket is equipped with an external adjusting mechanism which permits the adjustment of the lamp to the proper light center with respect to the refractors—a consideration that is essential for correct distribution. Two latches are provided so that an even pressure is maintained on the felt gasket. One of the latches is an adjustment on the hinge.

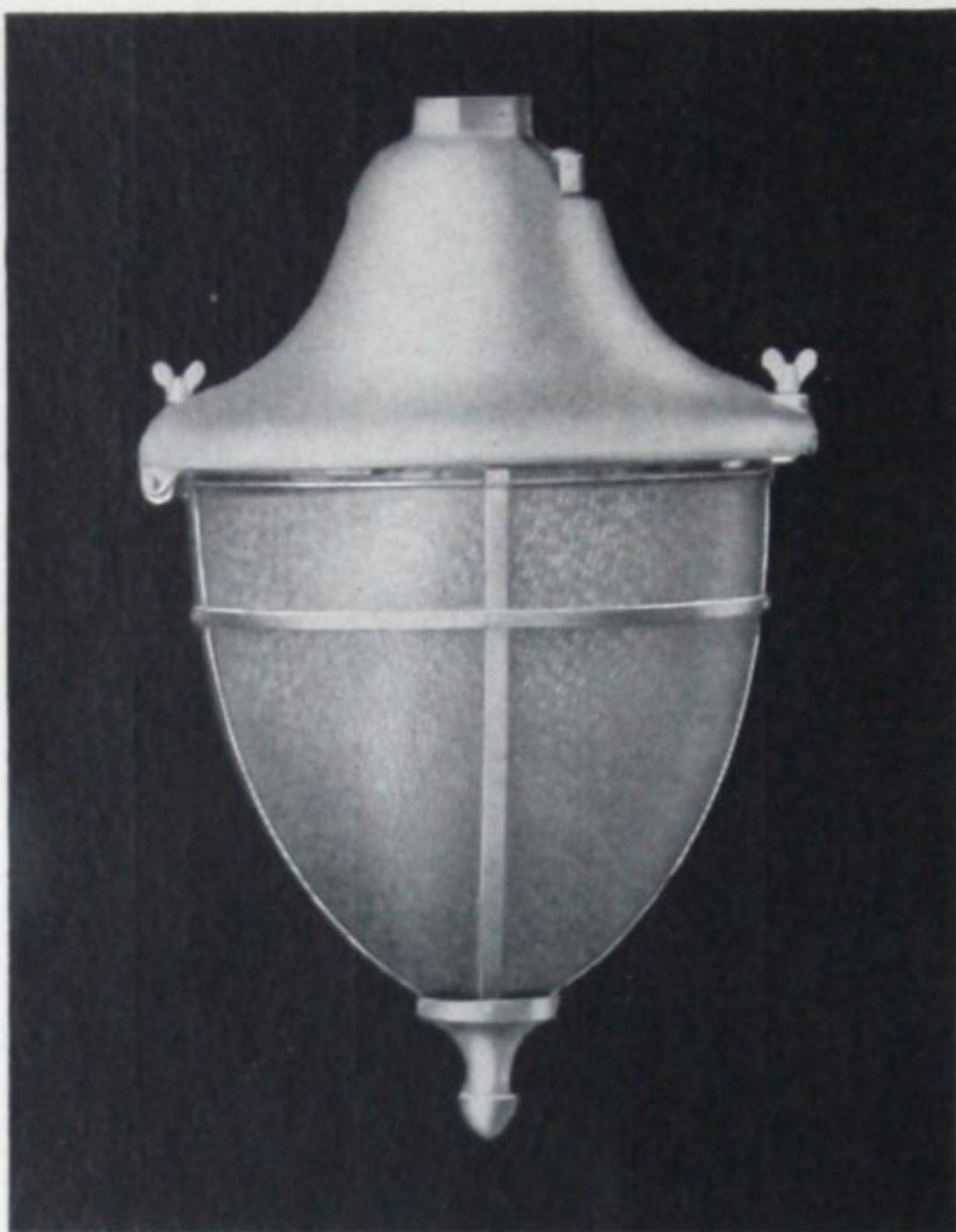


Fig. 1
(Photograph 720227)
Form 25-C Novalux suspension luminaire

The bracket type of mounting increases the utilization of light on the street and reduces the likelihood of interference from overhanging tree foliage. Lamps placed over the street provide specular lighting, which increases visibility.

The fixture may be installed on 6.6-ampere series systems using lamps from 2500 lumens to 15,000 lumens. Since the 4000- to 15,000-lumen lamps operate more efficiently on 15- and 20-ampere circuits, the use of Type IL transformers to provide the higher current is recommended.

CONSTRUCTION

Externally, the Form 25-C luminaire is of excellent appearance and will harmonize with practically any surrounding. The hood, or casing, is a casting which is furnished in either cast iron

The efficiency of the luminaire is increased by the use of a steel internal reflector with reflecting surface of white porcelain enamel.

ADVANTAGES

1. Lamps rated up to 15,000 lumens on series circuits and 500 watts on multiple circuits may be used with this fixture.
2. External adjusting mechanism speeds setting of lamps with respect to refractor.
3. Adjustable hinge and latch insures insect-tight and weatherproof fit of globe against casing.
4. No projections on casing, thereby presenting a pleasing appearance.
5. White-porcelain-enamel internal reflector increases efficiency.

FORM 25-C G-E NOVALUX SUSPENSION LUMINAIRE

MATERIAL AND FINISH OF CASING	Series		Multiple or * IL Transformer		APPROX WT IN LB	
	† CAT. NO.	† LIST PRICE Class GO-51	† CAT. NO.	† LIST PRICE Class GO-51	Net	Ship.

FORM 25-C WITH NO. 193 MEDIUM ALABASTER RIPPLED GLOBE For Use on Series Circuits Under 5000 Volts, Multiple or IL Transformer Circuits

Cast iron—green painted.....	54X192		54X195		25	50
Cast iron—galvanized.....	54X193		54X196		25	50
Aluminum—natural.....	54X191		54X194		20	45

ΔFORM 25-C WITH NO. 193 LIGHT ALABASTER RIPPLED GLOBE AND SYM-ETRIC DOME REFRACTOR NO. 1340228

Cast iron—green painted.....	55X669		55X672		28	—
Cast iron—galvanized.....	55X670		55X673		28	—
Aluminum—natural.....	55X668		55X671		28	—

FORM 25-C WITH NO. 193 LIGHT ALABASTER RIPPLED GLOBE AND SYM-ETRIC DOME REFRACTOR NO. 3775686

Cast iron—green painted.....	54X198		54X201		28	53
Cast iron—galvanized.....	54X199		54X202		28	53
Aluminum—natural.....	54X197		54X200		23	48

FORM 25-C WITH NO. 193 LIGHT ALABASTER RIPPLED GLOBE AND A-SYM-ETRIC DOME REFRACTOR NO. 2346021

Cast iron—green painted.....	54X204		54X207		28	53
Cast iron—galvanized.....	54X205		54X208		28	53
Aluminum—natural.....	54X203		54X206		23	48

FORM 25-C WITH NO. 193 LIGHT ALABASTER RIPPLED GLOBE AND B-SYM-ETRIC DOME REFRACTOR NO. 2346129

Cast iron—green painted.....	54X210		54X213		28	53
Cast iron—galvanized.....	54X211		54X214		28	53
Aluminum—natural.....	54X209		54X212		23	48

* For use with, but not including, a Type IL series transformer, which should be mounted on the base of the pole or in a manhole, or buried directly in the ground.
† Cat. No. and prices do not include MAZDA lamp or pole.
Δ Maximum lamp size 300-watt or 6000-lumen.

PRICES ON APPLICATION

"Renewal Part" prices may be deducted for omission of glassware. Do not deduct part prices for omission of other parts.

Description and typical distribution curves of refractors are given on pages 184 and 185.

DIMENSIONS

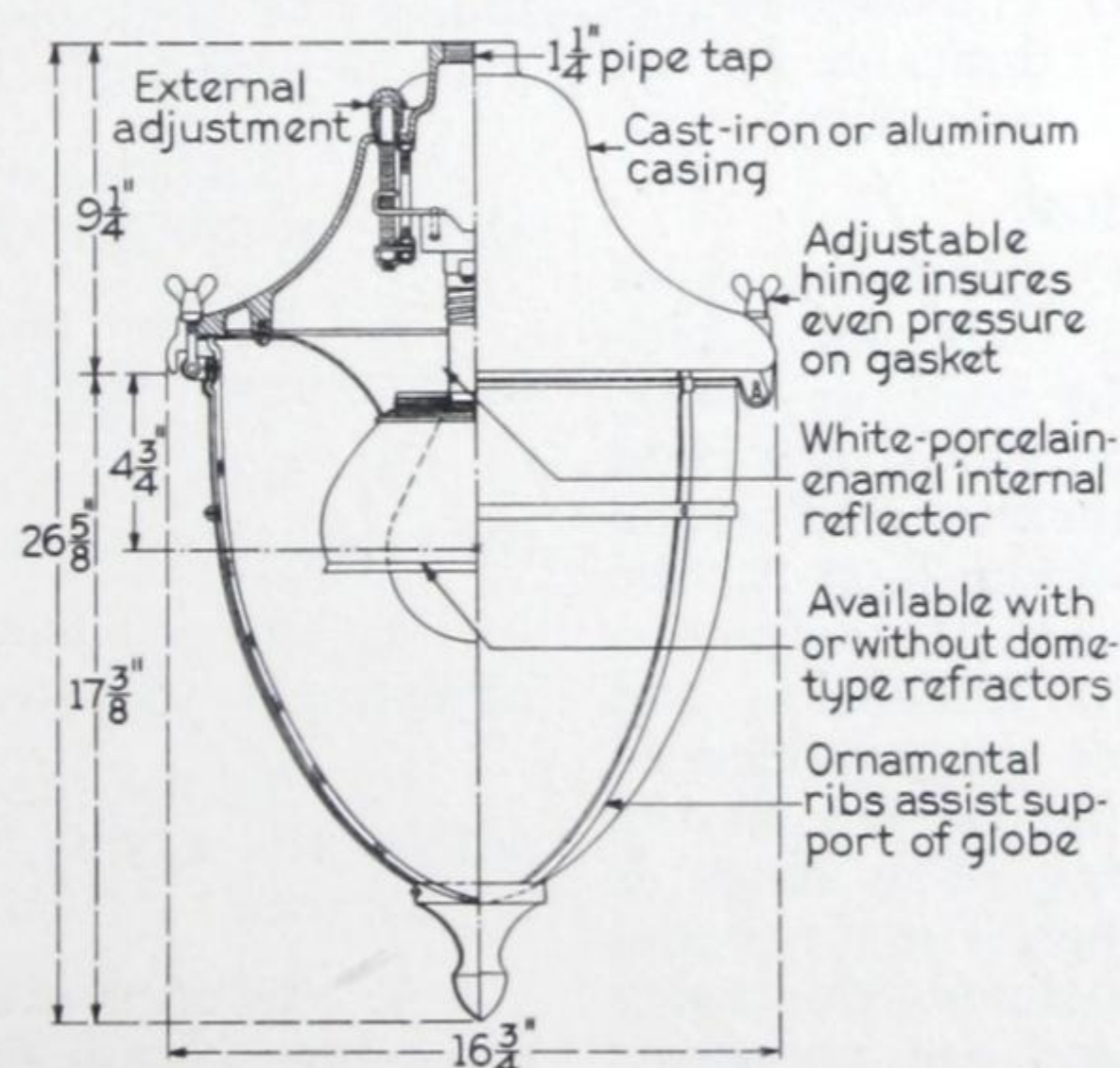


Fig. 2

FORM 25-D G-E NOVALUX SUSPENSION LUMINAIRE

For Operation on Multiple Circuits or Series Circuits with Type IL Transformers

The Form 25-D Novalux suspension luminaire is designed particularly to utilize the increased efficiency obtained by using the 11-in. refractor. This unit may be applied to good advantage on boulevards, main thoroughfares, highways, or any other place where a pendent unit with excellent appearance and high efficiency is required. The unit may be installed on series systems with Type

Three knurled screws are inserted through the globe-holder ring to prevent the refractor from falling out when the luminaire is opened. The 11-in. refractor with peep-hole is an essential feature of this fixture. It is highly efficient, and the peep-hole makes possible positive adjustment. An internal vitreous-enamelled reflector increases the efficiency of the luminaire.



Fig. 1
(Photograph 718945)
Form 25-D Novalux suspension luminaire

IL series transformers using lamps from 2500 to 15,000 lumens. On multiple circuits, lamps rated as high as 500 watts may be used. The use of large-sized lamps in this unit makes it desirable for use with modern high intensities of illumination.

CONSTRUCTION

Externally, the Form 25-D luminaire is of excellent appearance and will harmonize with practically any surroundings. The hood, or casing, is an aluminum casting in natural finish. The hood is equipped with an external adjusting mechanism which permits the adjustment of the lamp to the proper light center with respect to the refractor. This assures the most efficient utilization and correct distribution. Two latches are provided so that an equal tension will be maintained on the gaskets by the globe-holder ring. The hinge is located 90 degrees from the latches. The hinge and latches are confined within the outline of the casing so that no unsightly projections are apparent.

ADVANTAGES

1. Series lamps rated as high as 15,000 lumens or multiple lamps as high as 500 watts may be used with this fixture.
2. External adjusting mechanism facilitates setting of lamp with respect to refractor.
3. Hinge and double-latch arrangement assures insect-tight fit against casing.
4. Refractor and holder latched to prevent refractor slipping out of adjustment.
5. Peep-holes in 11-in. refractor assure easy adjustment to provide desired light distribution.
6. As the hinge and latches are concealed within the casing, the luminaire has a pleasing appearance.
7. Internal vitreous-enamel reflector increases efficiency of luminaire.

FORM 25-D G-E NOVALUX SUSPENSION LUMINAIRE

For Use on Multiple Circuits or *Type IL Transformer Series Circuits

WITH CAT. NO. 3775588—11-IN. B-SYM-ETRIC BOWL REFRACTOR

MATERIAL AND FINISH OF CASING	LAMP SIZE	† CAT. NO.	† LIST PRICE Class GO-51	APPROX WT IN LB	
				Net	Ship.
Aluminum—no finish	300-500-watt 2500-15,000-lumen	3732017G1	\$57.50	28	43

* For use with, but not including, a Type IL series transformer, which should be mounted in the base of the pole or on a crossarm or in a manhole, or buried directly in the ground.

† Cat. No. and prices do not include MAZDA lamps.

Description and typical distribution curves of refractor are given on page 187.

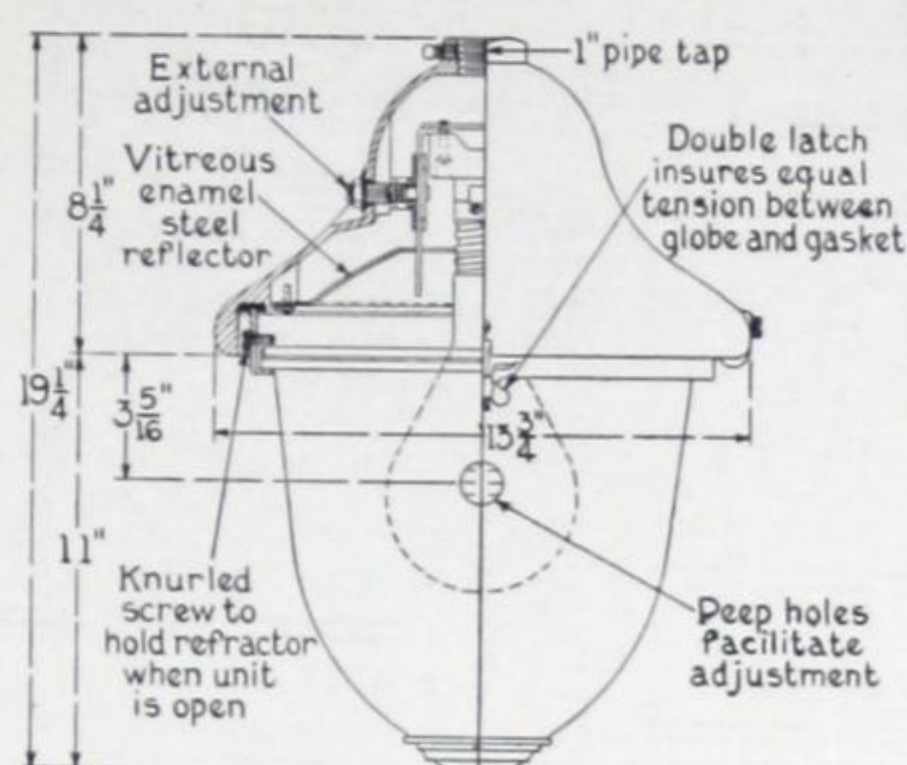


Fig. 2
Dimensions

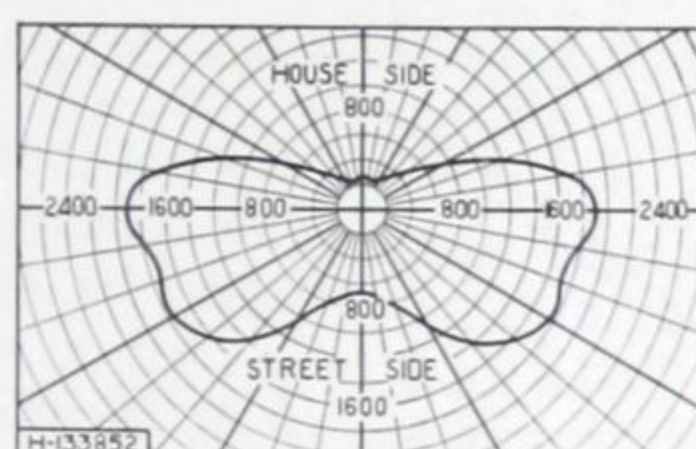


Fig. 3
Distribution in maximum (75 Deg) cone
with 6000-lumen lamp

FORMS 32 AND 32-D G-E NOVALUX SUSPENSION LUMINAIRES

Bracket Suspension—Green Finish



Fig. 1
(Photograph 719787)
Form 32 or 32-D luminaire with No. 146
alabaster rippled globe

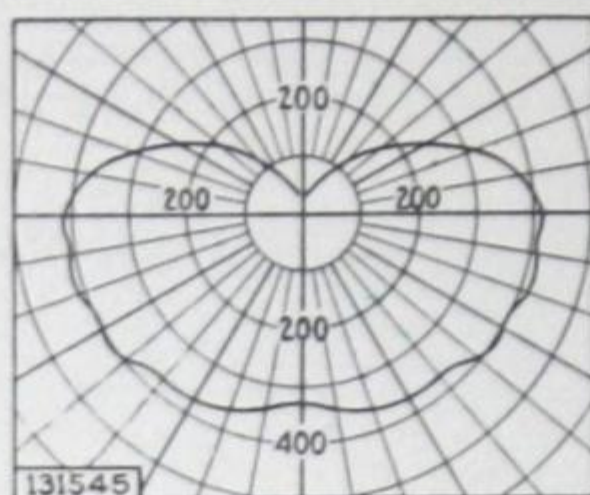


Fig. 2
Distribution curve, in vertical
plane, of luminaire with No.
146 medium alabaster
rippled globe and 6000-
lumen lamp

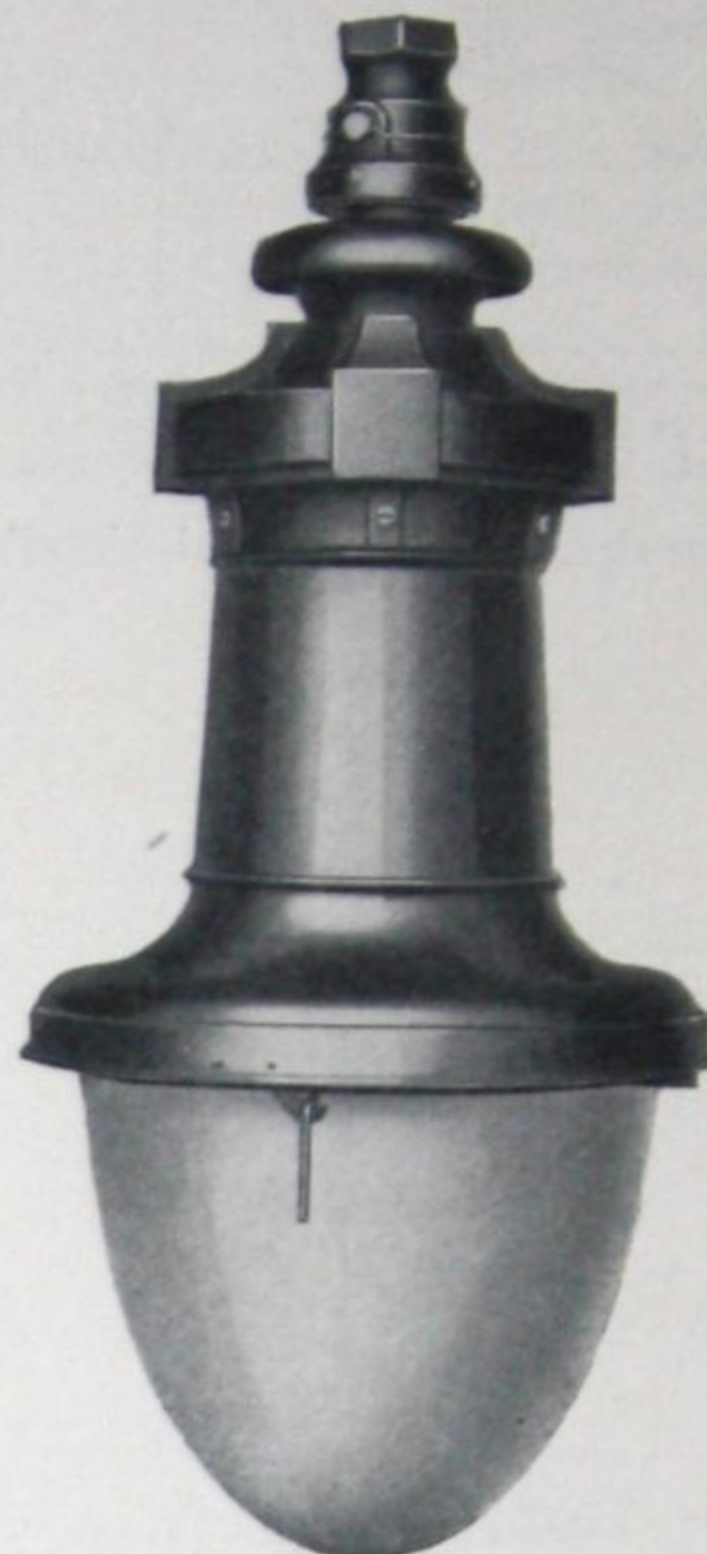


Fig. 3
(Photograph 719664)
Form 32 or 32-D luminaire with No. 116
alabaster rippled globe

APPLICATION

The Form 32 and Form 32-D Novalux suspension luminaire is recommended for ornamental lighting with ornamental lighting standards and with brackets, for installation with underground wiring. Where economy dictates the use of existing overhead lines, the luminaire may be used with brackets for mounting on wood poles.

With different shapes and sizes of rippled globes, both with and without dome refractors and with the various types of bowl refractors, this luminaire may be recommended for main thoroughfares, secondary business streets, residential streets, and park roadways, where high intensity illumination is required.

This luminaire is designed for use with series or multiple lamps, either 7- or 9½-in. light-center length, and with or without autotransformer; 2500 to 6000 lumen series and 300- to 500-watt multiple lamps may be used in all the globes listed. With the No. 146 and No. 162 globes, lamps up to 15,000-lumen series or 1000-watt multiple may be used. Refractors limit the sizes of lamps to 6000-lumen or 300-watt for the bowl refractors and 10,000-lumen or 500-watt for the dome refractors.

The No. 176 and No. 162 globes are rectangular in shape, having been designed for use with a light shield to limit the light on the house side and

prevent its being objectionable to residential owners. The rectangular globe conceals the shadow which would be cast by a light shield on a round globe.

Since series lamps of 4000 lumens and larger, 15 or 20 amperes, operate more efficiently and give better light distribution with refractors than the 6.6-ampere lamps, the use of a Type IL or autotransformer is recommended. Provision is made for mounting an autotransformer in the casing of the luminaire. The Type IL transformer provides the added protection of low-voltage wiring to the luminaire. These transformers may be mounted on the crossarm of a wood pole, in the base of an ornamental standard, or in the ground.

The selection of globes and refractors is determined by the appearance of the luminaire and by the light distribution required.

CONSTRUCTION

FORM 32

The Form 32 luminaire is extremely simple in construction. It consists of a collar, tapped for a 1¼-in. thread; a cast-iron cover; a casing of spun copper; and a globe holder. Two wet-process porcelain insulators are added on the autotransformer type to provide insulation to ground. The suspension collar is flexible, so that the luminaire will hang perfectly straight, and the opening is ample to permit the entrance of a two-conductor duplex

FORMS 32 AND 32-D G-E NOVALUX SUSPENSION LUMINAIRES



Fig. 4

(Photograph 719660)

Form 32 or 32-D luminaire with No. 162 alabaster rippled globe, narrow side

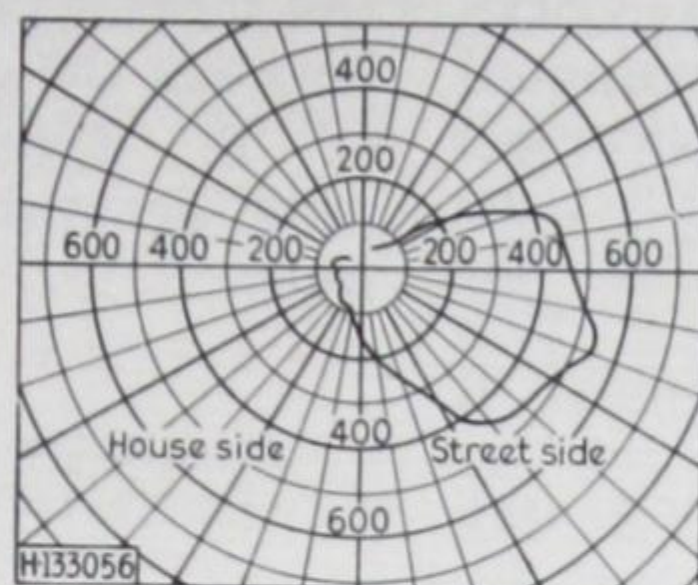


Fig. 5

Distribution curve, in vertical plane, at right angles to curb, of luminaire with No. 162 globe, 600-lumen lamp, and light shield on short side of globe

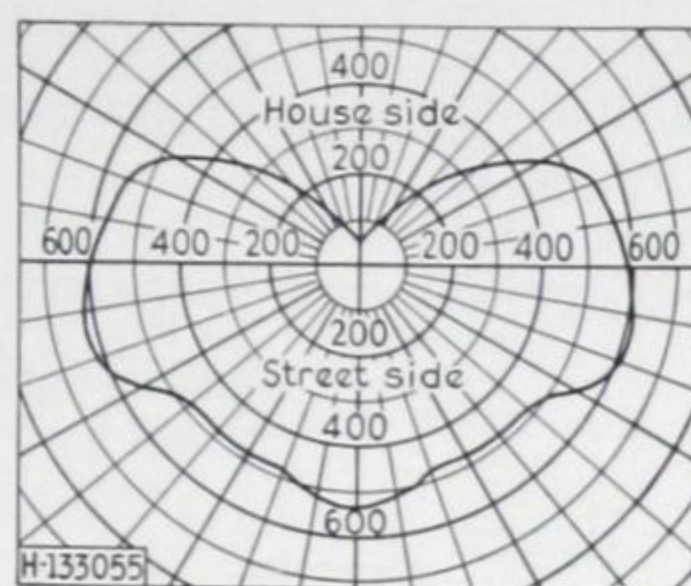


Fig. 6

Distribution curve, in cone 15 deg below horizontal, of luminaire with No. 162 globe, 6000-lumen lamp, and light shield on short side of globe



Fig. 7

(Photograph 719659)

Form 32 or 32-D luminaire with No. 162 alabaster rippled globe, wide side



Fig. 8

(Photograph 719663)

Form 32 or 32-D luminaire with reflector and No. 166 alabaster rippled globe

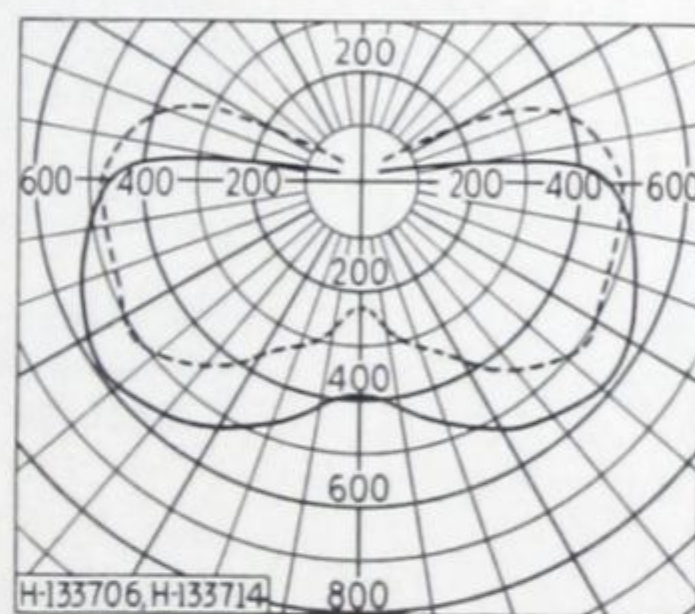


Fig. 9

Distribution curve, in vertical plane, of luminaire with No. 166 medium alabaster rippled globe and 6000-lumen lamp

A—without reflector
B—with reflector

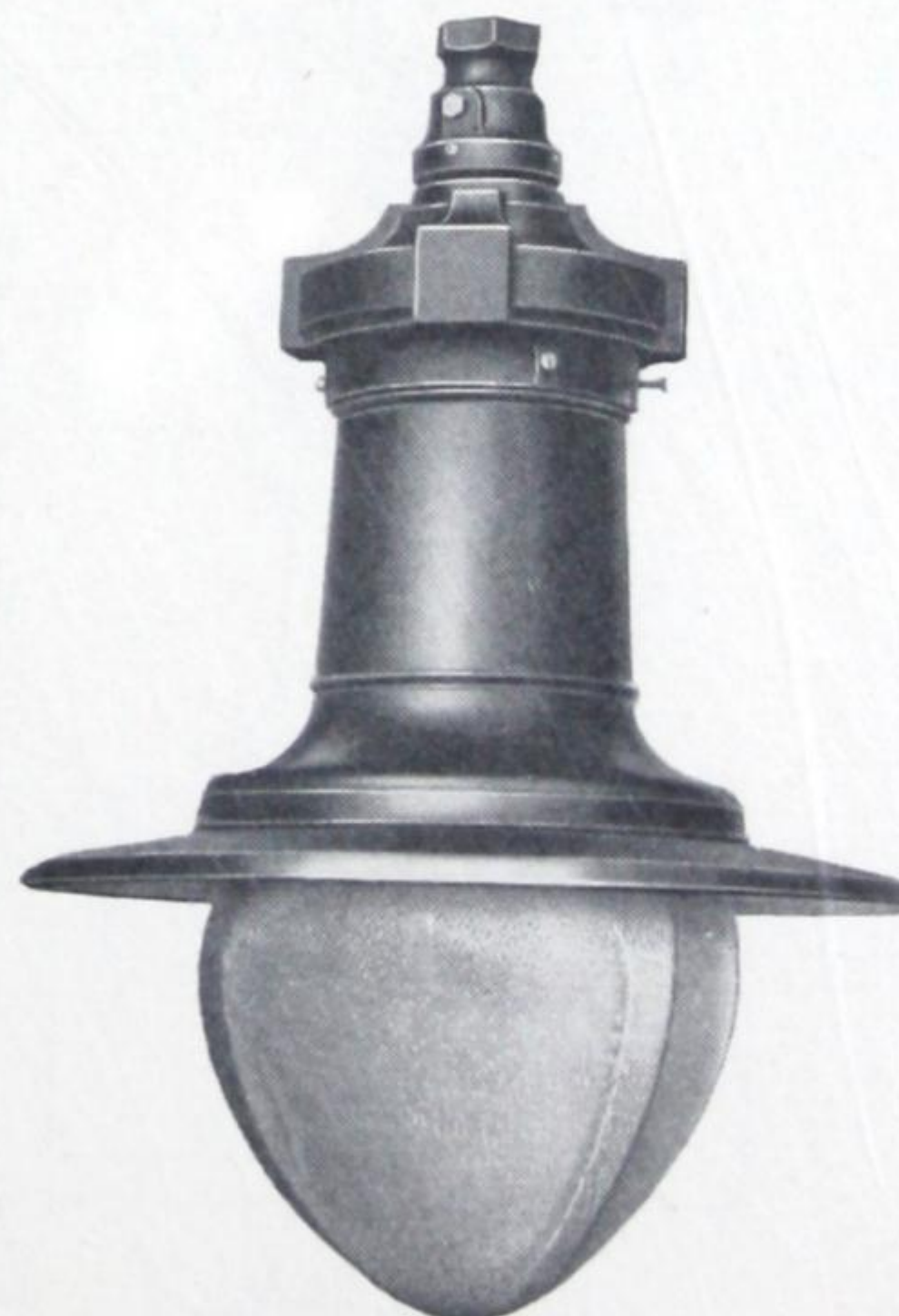


Fig. 10

(Photograph 720318)

Form 32 or 32-D luminaire with reflector and No. 176 alabaster rippled globe

FORMS 32 AND 32-D G-E NOVALUX SUSPENSION LUMINAIRES

a two-conductor duplex cable. The sockets in both the straight series and multiple types are mounted on adjustable supports. When autotransformers are used, they are bolted to the inside of the cast-iron cover. The copper casing bayonets into the cast-iron cover and is held by a set screw. This fixture is provided with gaskets which render it thoroughly weatherproof and dustproof.

The spring type of holder is used on the smaller globes and the refractor types. A rigid cast-aluminum holder is used with the large No. 146 globe. This is equipped with wing nuts on the hinge and latch, so that when the globe is closed, it is necessary only to tighten the wing nut on the latch side and then on the hinge side until a tight fit is obtained.

FORM 32-D

The Form 32-D is identical with the Form 32 except that an external socket adjustment is provided. This greatly facilitates the correct and accurate setting of the lamp center with respect to the refractors.

ADVANTAGES

1. Suspension luminaire with ornamental appearance.
2. A flexible suspension which permits the luminaire to level itself.
3. Spun-copper casing without seams or joints.
4. Insects and dust cannot enter and impair the efficiency of the luminaire, being kept out by the enclosing glassware.
5. The cast-aluminum globe holder, being adjustable on both the hinge and the latch sides to

the large globes, permits a firm, insectproof joint between the globe and the casing.

6. External adjustment on Form 32-D permits accurate lamp-center setting on refractor units.

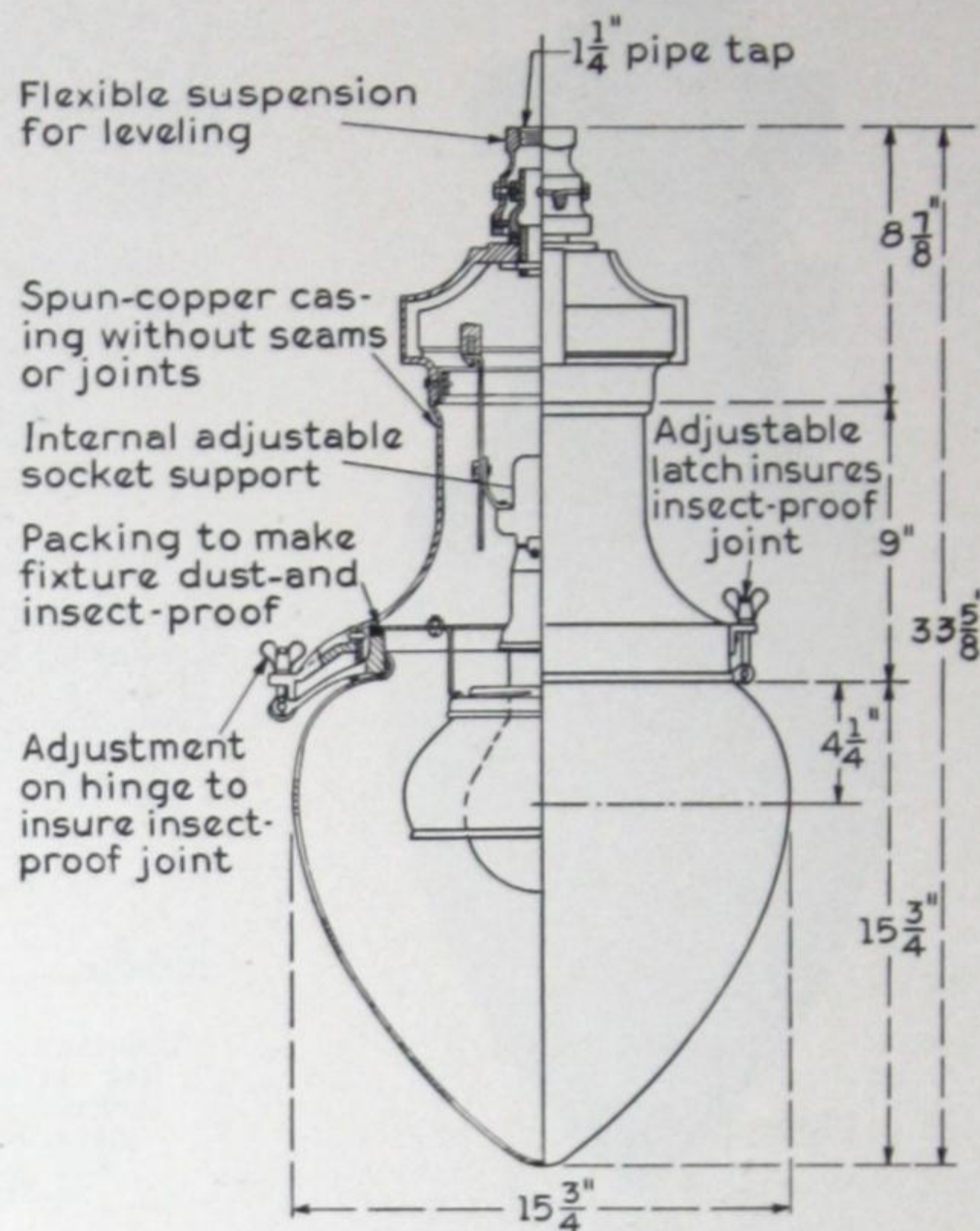


Fig. 12

Section of Form 32 luminaire with No. 146 globe, series type

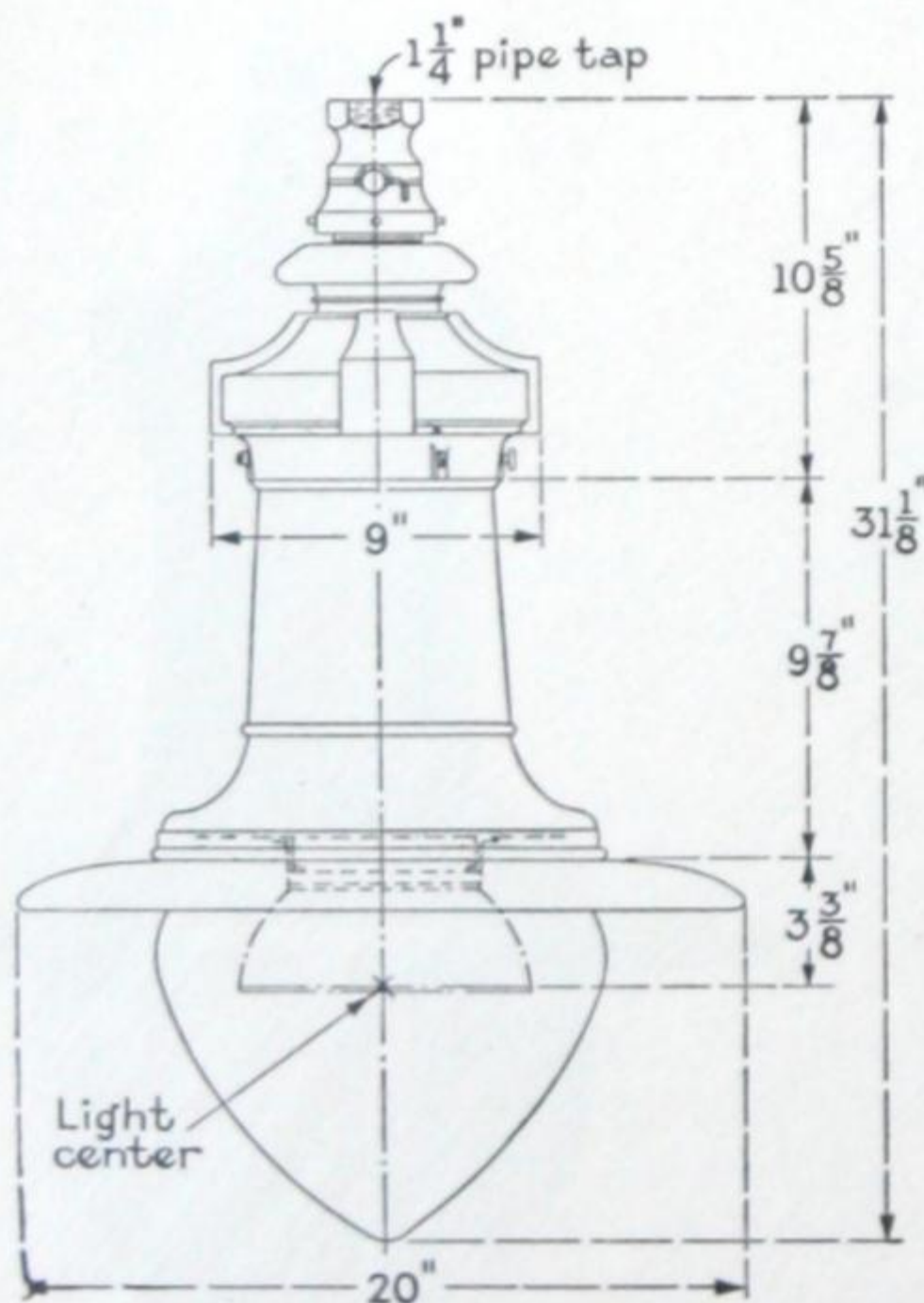


Fig. 11
(K-3717310)

Luminaire with No. 166 globe and reflector,
autotransformer type

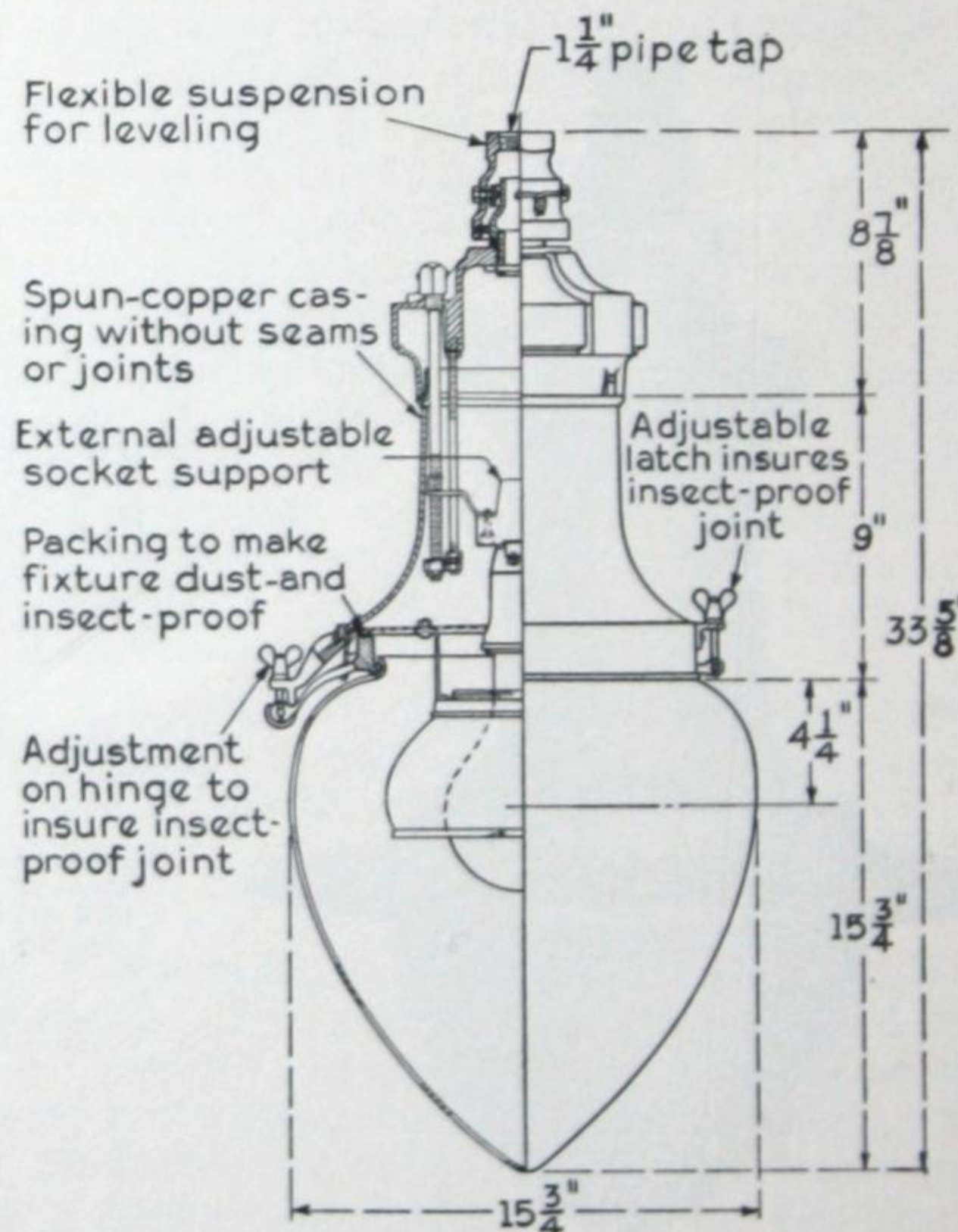


Fig. 13

Section of Form 32-D luminaire with No. 146 globe, series type

FORM 32 G-E NOVALUX SUSPENSION LUMINAIRES

STRAIGHT SERIES, STRAIGHT MULTIPLE, AND †IL SERIES TRANSFORMER TYPES

EQUIPPED WITH	Fig. No.	STRAIGHT SERIES TYPE 2500, 4000, AND 6000 LUMENS, 5.5, 6.5, AND 7.5 AMP		STRAIGHT MULTIPLE TYPE 300- AND \$500-WATT † IL TRANSFORMER TYPE 4000 LUMENS, 15 AMP 6000 AND \$10,000 LUMENS, 20 AMP		Approx Ship. Wt in Lb
		*Cat. No. (Luminaire Complete)	*List Price Class GO-51	*Cat. No. (Luminaire Complete)	*List Price Class GO-51	
No. 146 Medium Alabaster Rippled Globe without Refractor.....	1	60X5	\$61.90	{ † 60X24 △60X20 }	\$58.00	63
No. 146 Light Alabaster Rippled Globe						
With SYM-ETRIC Dome Refractor, Cat. No. 1340228.....	1	3X708	73.40	3X746	69.50	70
With SYM-ETRIC Dome Refractor, Cat. No. 3775686.....	1	60X6	73.40	60X25	69.50	70
With A-SYM-ETRIC Dome Refractor, Cat. No. 2346021.....	1	3X709	75.90	3X747	72.00	70
With B-SYM-ETRIC Dome Refractor, Cat. No. 2346129.....	1	3X710	75.90	3X748	72.00	70
No. 162 Medium Alabaster Rippled Globe without Refractor.....	4	26X488	61.90	{ † 26X492 △26X496 }	58.00	65
No. 162 Light Alabaster Rippled Globe						
With SYM-ETRIC Dome Refractor, Cat. No. 1340228.....	4	26X489	73.40	26X493	69.50	72
With SYM-ETRIC Dome Refractor, Cat. No. 3775686.....	4	60X19	73.40	60X38	69.50	72
With A-SYM-ETRIC Dome Refractor, Cat. No. 2346021.....	4	26X490	75.90	26X494	72.00	72
With B-SYM-ETRIC Dome Refractor, Cat. No. 2346129.....	4	26X491	75.90	26X495	72.00	72
No. 116 Medium Alabaster Rippled Globe without Refractor.....	3	60X7	46.20	† 60X26	42.30	50
No. 116 Light Alabaster Rippled Globe						
With SYM-ETRIC Dome Refractor, Cat. No. 1340228.....	3	3X712	57.70	3X750	53.80	57
With SYM-ETRIC Dome Refractor, Cat. No. 3775686.....	3	60X8	57.70	60X27	53.80	57
With A-SYM-ETRIC Dome Refractor, Cat. No. 2346021.....	3	3X713	60.20	3X751	56.30	57
With B-SYM-ETRIC Dome Refractor, Cat. No. 2346129.....	3	3X714	60.20	3X752	56.30	57
No. 166 Medium Alabaster Rippled Globe and Reflector, Cat. No. 342543, Without Refractor.....	8	60X9	50.40	† 60X28	46.50	43
No. 166 Light Alabaster Rippled Globe and Reflector, Cat. No. 342543						
With SYM-ETRIC Dome Refractor, Cat. No. 1340228.....	8	60X10	61.90	60X29	58.00	50
With SYM-ETRIC Dome Refractor, Cat. No. 3775686.....	8	60X11	61.90	60X30	58.00	50
With A-SYM-ETRIC Dome Refractor, Cat. No. 2346021.....	8	60X12	64.40	60X31	60.50	50
With B-SYM-ETRIC Dome Refractor, Cat. No. 2346129.....	8	60X13	64.40	60X32	60.50	50
No. 176 Medium Alabaster Rippled Globe and Reflector, Cat. No. 342543, Without Refractor.....	10	60X14	50.40	† 60X33	46.50	43
No. 176 Light Alabaster Rippled Globe and Reflector, Cat. No. 342543						
With SYM-ETRIC Dome Refractor, Cat. No. 1340228.....	10	60X15	61.90	60X34	58.00	50
With SYM-ETRIC Dome Refractor, Cat. No. 3775686.....	10	60X16	61.90	60X35	58.00	50
With A-SYM-ETRIC Dome Refractor, Cat. No. 2346021.....	10	60X17	64.40	60X36	60.50	50
With B-SYM-ETRIC Dome Refractor, Cat. No. 2346129.....	10	60X18	64.40	60X37	60.50	50
Bowl Refractor, Cat. No. 1340382 and Reflector, Cat. No. 342543.....	...	3X724	57.30	3X762	58.40	43

* Prices and catalog numbers do not include MAZDA lamps.

† For use with, but not including, a Type IL series transformer.

‡ These luminaires may be operated with 15,000-lumen lamps when no refractors are used.

△ For 750- or 1000-watt multiple lamps.

§ 500-watt or 10,000-lumen lamps not recommended for use in bowl refractors or SYM-ETRIC dome refractors, Cat. No. 1340228.

Luminaires with No. 162 or No. 176 globes may be equipped with light shield, Cat. No. 4830956G1. Add \$1.85 to list price.

FORM 32-D G-E NOVALUX SUSPENSION LUMINAIRES

STRAIGHT SERIES, STRAIGHT MULTIPLE, AND †IL SERIES TRANSFORMER TYPES

EQUIPPED WITH	Fig. No.	STRAIGHT SERIES TYPE 2500, 4000, 6000 LUMENS, 5.5, 6.5, AND 7.5 AMP		STRAIGHT MULTIPLE TYPE 300- AND §500-WATT † IL TRANSFORMER TYPE 4000 LUMENS, 15 AMP 6000 AND §10,000 LUMENS, 20 AMP		Approx Ship. Wt in Lb
		*Cat. No. (Luminaire Complete)	*List Price Class GO-51	*Cat. No. (Luminaire Complete)	*List Price Class GO-51	
No. 146 Medium Alabaster Rippled Globe without Refractor.....	1	55X427	\$65.00	† 55X448	\$61.10	63
No. 146 Light Alabaster Rippled Globe						
With SYM-ETRIC Dome Refractor, Cat. No. 1340228.....	1	55X428	76.50	55X449	72.60	70
With SYM-ETRIC Dome Refractor, Cat. No. 3775686.....	1	55X429	76.50	△55X450	72.60	70
With A-SYM-ETRIC Dome Refractor, Cat. No. 2346021.....	1	55X430	79.00	△55X451	75.10	70
With B-SYM-ETRIC Dome Refractor, Cat. No. 2346129.....	1	55X431	79.00	△55X452	75.10	70
No. 162 Medium Alabaster Rippled Globe without Refractor.....	4	55X432	65.00	† 55X453	61.10	65
No. 162 Light Alabaster Rippled Globe						
With SYM-ETRIC Dome Refractor, Cat. No. 1340228.....	4	55X433	76.50	55X454	72.60	72
With SYM-ETRIC Dome Refractor, Cat. No. 3775686.....	4	55X434	76.50	△55X455	72.60	72
With A-SYM-ETRIC Dome Refractor, Cat. No. 2346021.....	4	55X435	79.00	△55X456	75.10	72
With B-SYM-ETRIC Dome Refractor, Cat. No. 2346129.....	4	55X436	79.00	△55X457	75.10	72
No. 116 Medium Alabaster Rippled Globe without Refractor.....	3	55X437	49.30	55X458	45.40	50
No. 116 Light Alabaster Rippled Globe						
With SYM-ETRIC Dome Refractor, Cat. No. 1340228.....	3	55X438	60.80	55X459	56.90	57
With SYM-ETRIC Dome Refractor, Cat. No. 3775686.....	3	55X439	60.80	55X460	56.90	57
With A-SYM-ETRIC Dome Refractor, Cat. No. 2346021.....	3	55X440	63.30	55X461	59.40	57
With B-SYM-ETRIC Dome Refractor, Cat. No. 2346129.....	3	55X441	63.30	55X462	59.40	57
No. 166 Medium Alabaster Rippled Globe and Reflector, Cat. No. 342543, Without Refractor.....	8	55X442	53.50	△55X463	49.60	43
No. 166 Light Alabaster Rippled Globe and Reflector, Cat. No. 342543						
With SYM-ETRIC Dome Refractor, Cat. No. 1340228.....	8	55X443	65.00	55X464	61.10	50
With SYM-ETRIC Dome Refractor, Cat. No. 3775686.....	8	55X444	65.00	55X465	61.10	50
With A-SYM-ETRIC Dome Refractor, Cat. No. 2346021.....	8	55X445	67.50	55X466	63.60	50
With B-SYM-ETRIC Dome Refractor, Cat. No. 2346129.....	8	55X446	67.50	55X467	63.60	50
No. 176 Medium Alabaster Rippled Globe and Reflector, Cat. No. 342543, Without Refractor.....	10	55X836	53.50	△55X841	49.60	43
No. 176 Light Alabaster Rippled Globe and Reflector, Cat. No. 342543						
With SYM-ETRIC Dome Refractor, Cat. No. 1340228.....	10	55X837	65.00	55X842	61.10	50
With SYM-ETRIC Dome Refractor, Cat. No. 3775686.....	10	55X838	65.00	55X843	61.10	50
With A-SYM-ETRIC Dome Refractor, Cat. No. 2346021.....	10	55X839	67.50	55X844	63.60	50
With B-SYM-ETRIC Dome Refractor, Cat. No. 2346129.....	10	55X840	67.50	55X845	63.60	50
Bowl Refractor, Cat. No. 1340382 and Reflector Cat. No. 342543.....	...	55X447	60.40	55X468	56.50	43

* Prices and catalog numbers do not include MAZDA lamps.

† For use with, but not including, a Type IL series transformer.

‡ These luminaires may be operated with 750- or 1000-watt multiple lamps.

§ 500-watt or 10,000-lumen lamps not recommended for use in bowl refractors or SYM-ETRIC dome refractors, Cat. No. 1340228.

△ These luminaires may be operated with 15,000-lumen lamps.

Luminaires with No. 162 or No. 176 globes may be equipped with light shield, Cat. No. 4830956G1. Add \$1.85 to list price.

FORMS 45-H AND 45-M NOVALUX SUSPENSION LUMINAIRES

For Use on All Series Circuits

APPLICATION

Novalux Forms 45-H and 45-M suspension luminaires are suitable for installation in residential sections, on secondary business streets, or in outlying communities, wherever overhead series circuits are in operation. They are applicable both as to appearance and economy of maintenance. These luminaires are of simplified design and have, in addition to several other important features, one outstanding advantage, in that all parts are interchangeable. Changes in lamps and glassware accommodations are readily accomplished to meet all requirements that may develop in the community served.

likelihood of radio and telephone interference and provides maximum protection for both equipment and personnel.

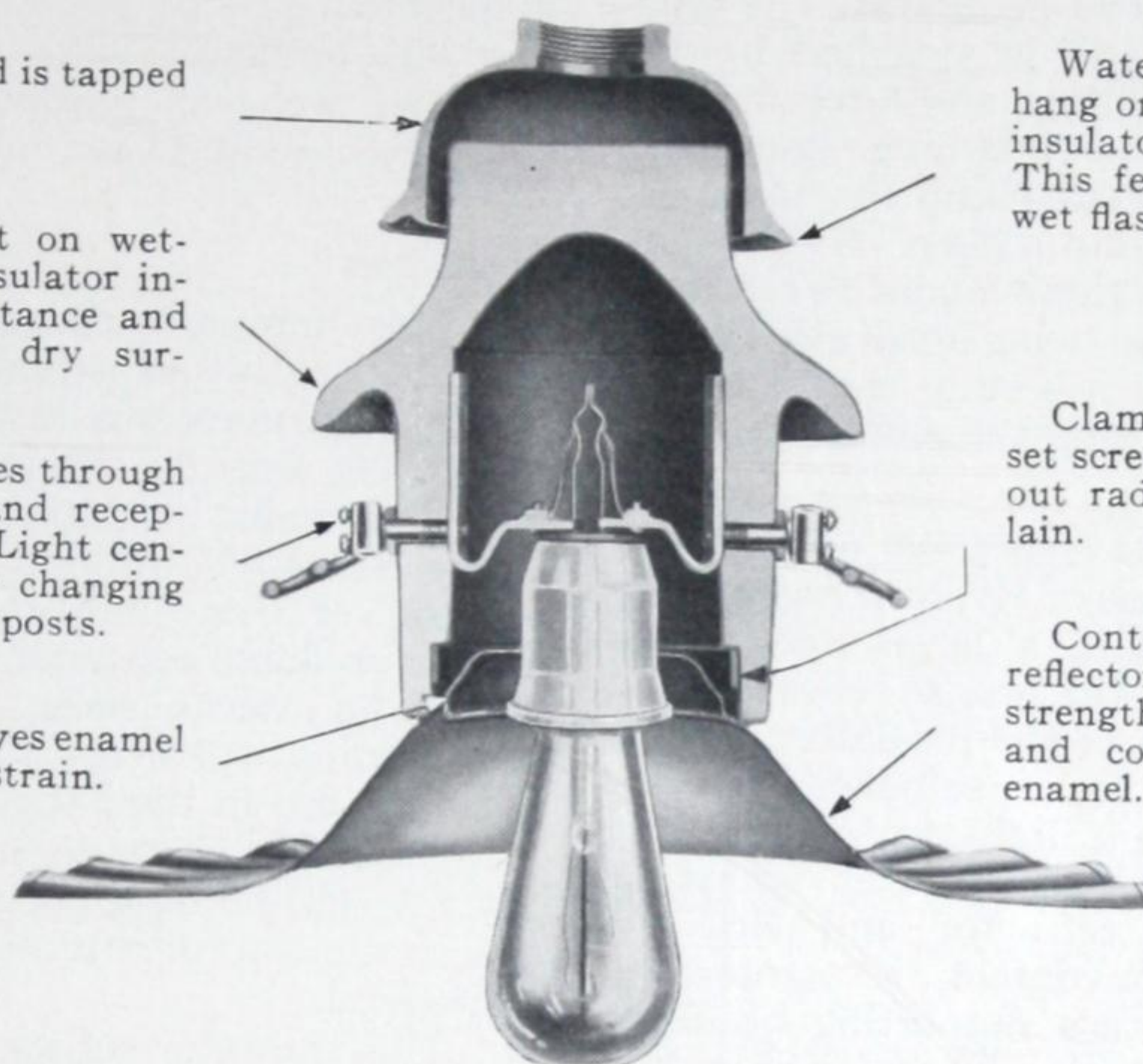
A flexible and serviceable arrangement is provided for supporting either sheet-metal or cast-iron reflectors with glassware to the insulator without the use of adapters. Three heavy Everdur supporting and positioning screws, mounted in a bronze ring, impinge against a concentrically grooved copper collar on the sheet-metal reflector, or against the conical depressions in the lugs of the cast-iron reflector. This clamping arrangement not only forms a firm support for the reflector, but also acts as a protection for the insulator, as the possi-

The cast-iron hood is tapped for a 1 1/4-in. pipe.

Overhanging skirt on wet-process porcelain insulator increases creepage distance and provides additional dry surface.

Binding post passes through tie lug, insulator, and receptacle clip supports. Light centers are adjusted by changing supports on binding posts.

Copper collar relieves enamel surface from undue strain.



Water dripping from overhang on cast-iron hood strikes insulator just above skirt. This feature greatly increases wet flashover voltage.

Clamping ring with three set screws holds reflector without radial pressure on porcelain.

Contour of sheet-metal reflector greatly increases strength and prevents flexing and consequent chipping of enamel.

Sectional view of Form 45-H luminaire with sheet-metal reflector

CONSTRUCTION

GENERAL

The Form 45-H Novalux luminaire consists of a cast-iron hood, wet-process porcelain insulator, series socket, sheet-metal, fire-enameled, radial-wave reflector, or a cast-iron reflector with refractor holder and refractor, or globe holder and globe as required.

The Form 45-M1 Novalux luminaire is similar to the Form 45-H4 Novalux luminaire with all the combinations of reflectors and glassware except that the insulator is of dry-process porcelain.

The main insulator of the Form 45-H line is made of wet-process porcelain, is finished with a green glaze, provides high mechanical and dielectric strength, is nonhygroscopic, and is equipped with nonferrous contact parts and supporting elements. These features insure an ideal insulator for high-voltage series street-lighting circuits, which reduces

bility of radial stress on the insulator is eliminated.

The sheet-metal radial-wave reflector is made of high-grade enameling steel and is finished in white fired vitreous enamel on the reflecting surface and green fired vitreous enamel on the outside surfaces. The contour of the reflector increases its strength and prevents flexing of the metal and consequent chipping of the enamel. A concentrically grooved copper collar is provided, against which the supporting screws impinge, relieving the enameled surface from undue strain.

An ornate cast-iron reflector is available which can be furnished either with green paint, hot-dip galvanized, or green fire-enameled finish. The vitreous fire-enameled finish provides a lustrous surface of high efficiency, long life, low maintenance, and excellent appearance. This reflector also serves as a support for glassware by the addition of nonferrous hinge and latch fittings.

FORMS 45-H AND 45-M NOVALUX SUSPENSION LUMINAIRES

For Use on All Series Circuits

The bowl and band-refractor holder consists of a cast-aluminum ring with rigid hinge and latch fitting, which insures an even pressure against the reflector at all times. Felt is cemented to the aluminum ring to provide long-life gaskets, facilitate servicing, and make a dustproof and insect-proof device.

The No. 166 globe uses a globe holder similar to the refractor holder, and with all its advantages. This holder is of sufficient diameter to allow the globe to swing by the dome refractor when this is used.

If a dome refractor is to be operated, a separate holder is provided, and is attached by the same screws that hold the hinge and latch fittings.

With the new design of rigid-hinge and snap-latch fittings, it is possible to relamp the luminaire from the ground with a "lamp picker." By pressing on the latch it releases the globe holder or refractor holder, allowing the globe to swing open, clear of the lamp. To close, the globe is swung shut and the latch snaps into place, holding the globe securely.

FORM 45-H1

This luminaire consists essentially of a shallow cast-iron hood with three heavy Everdur positioning and supporting screws, and a large wet-process porcelain insulator having the bronze reflector supporting ring on the inside of the insulator.

The main insulator is of sufficient size to utilize either 5 $\frac{3}{8}$ -in. or 7-in. light-center lamps in reflector position, or 7-in. light-center lamps in bowl refractor or dome refractor and No. 166 globe positions. The bronze contact and reinforcing springs are fastened to brass supporting brackets forming the series receptacle. Each bracket has three tapped holes, permitting assembly in any one of three locations. A combination binding post and clamping screw passes through the cast-bronze line-wire tie lug on the outside of the insulator, through the insulator wall, and into the proper hole in the bracket. All contact parts are nickel-plated to insure good contact. The external tie lugs and binding posts facilitate installation and testing. This insulator is made for external wiring only, but can be furnished with a hole through the top and internal binding posts if specified.

This luminaire, when tested in accordance with A.I.E.E. wet-test requirements, shows start of static leakage at 14 kv, and flashover at 28 kv.

FORM 45-H2

This luminaire consists essentially of a shallow cast-iron hood with three heavy Everdur positioning and supporting screws and an intermediate size of wet-process porcelain insulator having the bronze reflector supporting ring on the inside of the insulator.

The main insulator is of sufficient size to utilize either 5 $\frac{3}{8}$ -in. light-center lamps in reflector

position or 7-in. light-center lamps in bowl refractor or dome refractor and No. 166 globe positions. The internal socket receptacle has the same construction as the Form 45-H1 with the exception that the brass supporting brackets have only two tapped holes to permit assembly in two locations. The external tie lugs and binding posts are the same as those used in the Form 45-H1.

Provision is made for external wiring only, but internal binding posts and an insulator with a hole in the top for internal wiring can be furnished if specified.

This luminaire when tested in accordance with A.I.E.E. wet-test requirements, shows start of static leakage at 14 kv, and flashover at 32 kv.

FORM 45-H3

This luminaire consists essentially of a cast-iron hood with four supporting screws and a small wet-process porcelain insulator with the reflector supporting ring on the inside of the insulator.

The main insulator is of sufficient size to utilize either 5 $\frac{3}{8}$ -in. light-center lamps in reflector position or 7-in. light-center lamps in bowl refractor or dome refractor and No. 166 globe positions. The internal receptacle and external tie lugs and binding posts are of the same construction as those used in the Form 45-H2.

Provision is made for external wiring only, but internal binding posts and an insulator with a hole in the top for internal wiring can be furnished if specified.

This insulator shows start of static leakage at 10 kv, and flashover at 25 kv.

FORM 45-H4

This luminaire consists essentially of a cast-iron hood with four insulator supporting screws and a small wet-process porcelain insulator having porcelain tie lugs cast integral with the body of the insulator. The bronze reflector supporting ring is on the inside of the insulator.

The main insulator is of sufficient size to utilize either 5 $\frac{3}{8}$ -in. light-center lamps in the reflector position or 7-in. light-center lamps in bowl refractor or No. 166 globe and dome refractor positions. Provision is made for external or internal wiring with porcelain tie lugs cast integral with the body of the insulator.

The bronze contact springs, reinforcing springs, and two screw binding posts are assembled to a small dry-process porcelain part which is mounted in the wet-process insulator by means of two screws and threaded inserts. The openings in the binding posts line up with holes in the porcelain wall so as to facilitate connection of line leads. All contact parts are nickel-plated to insure good contact.

FORMS 45-H AND 45-M NOVALUX SUSPENSION LUMINAIRES

For Use on All Series Circuits

This luminaire when tested in accordance with AIEE wet-test requirements shows start of static leakage at 16 kv, and flashover at 32 kv.

FORM 45-M1

This luminaire consists essentially of a cast-iron hood with four insulator supporting screws and a small dry-process porcelain insulator having porcelain tie lugs cast integral with the body of the insulator. The bronze reflector supporting ring is on the inside of the insulator.

The main insulator is similar to the insulator on the Form 45-H4 luminaire except that it is constructed of dry-process porcelain. It is of sufficient size to utilize either 5 $\frac{3}{8}$ -in. light-center lamps in the reflector position or 7-in. light-center lamps in bowl refractor or No. 166 globe and dome refractor positions. Provision is made for external and internal wiring with porcelain tie lugs cast integral with the body of the insulator.

The bronze contact springs, reinforcing springs and two screw binding posts are assembled to a small dry-process porcelain part which is mounted in the dry-process insulator by means of two screws and threaded inserts. The openings in the binding posts line up with holes in the porcelain wall so as to facilitate connection of line leads. All contact parts are nickel-plated to insure good contact.

This luminaire when tested in accordance with AIEE wet-test requirements shows start of static leakage at 12 kv, and flashover at 25 kv.

ADVANTAGES

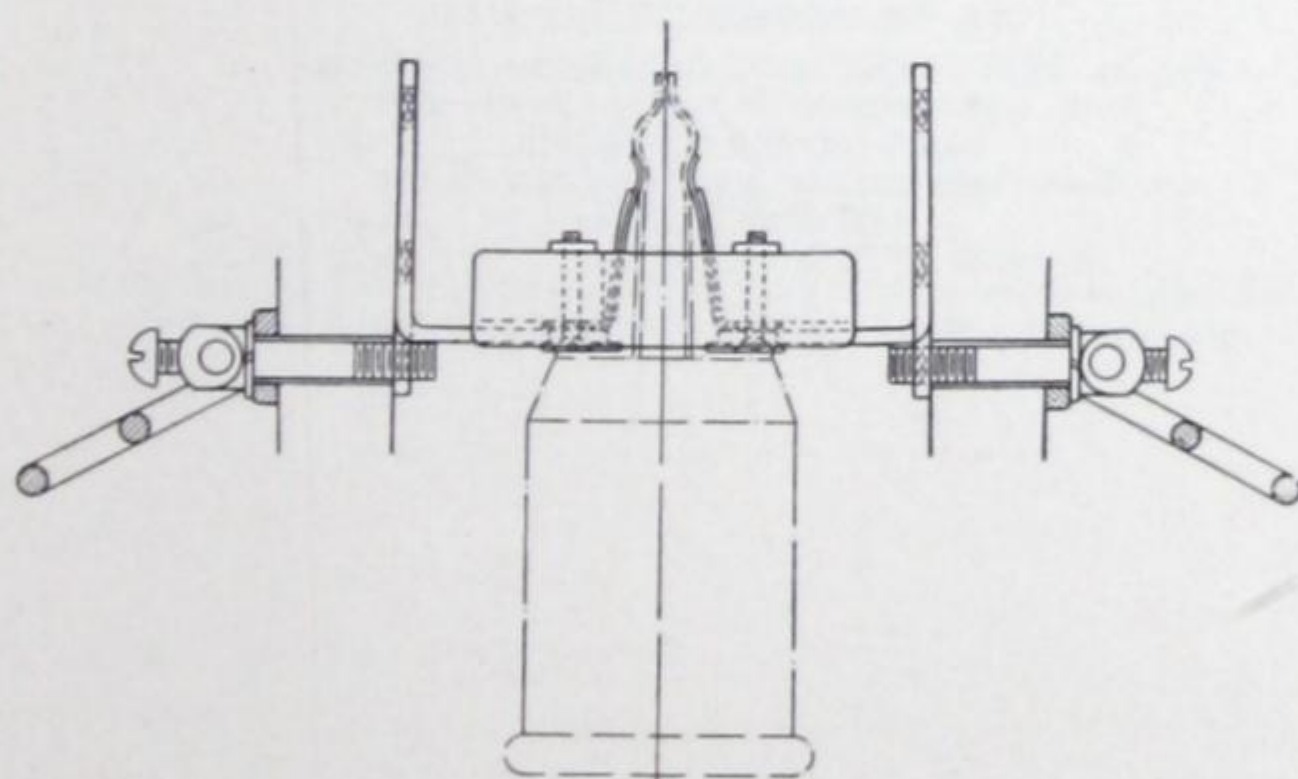
1. High insulation values obviate radio and telephone interference and provide maximum protection on high-voltage street-lighting circuits.

Following are the values based on AIEE standard wet test.

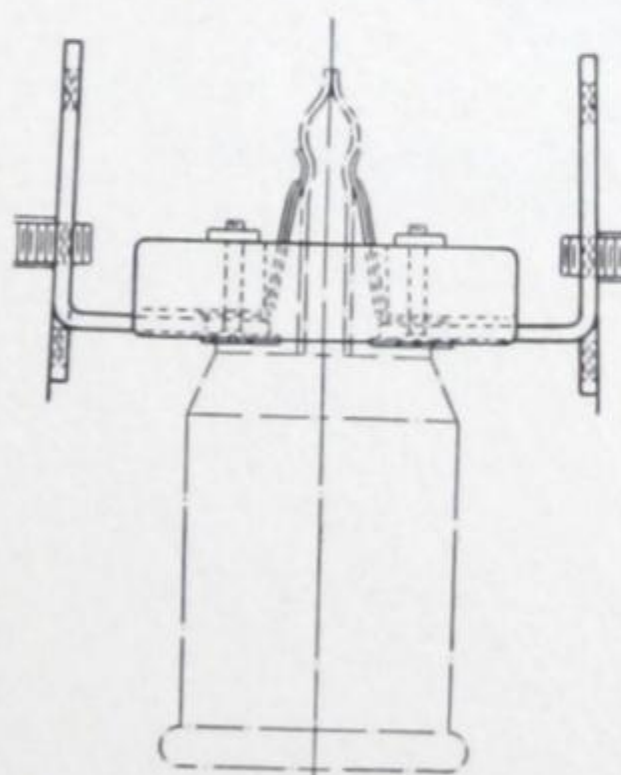
- (a) Form 45-H1: Static leakage starts at 14 kv, with flashover at 28 kv.
 - (b) Form 45-H2: Static leakage starts at 14 kv, with flashover at 32 kv.
 - (c) Form 45-H3: Static leakage starts at 10 kv, with flashover at 25 kv.
 - (d) Form 45-H4: Static leakage starts at 16 kv, with flashover at 32 kv.
 - (e) Form 45-M1: Static leakage starts at 12 kv, with flashover at 25 kv.
2. On Form 45-H1, adjustable receptacle for socket allows operation of 5 $\frac{3}{8}$ -in. light-center lamps in reflector position and 7-in. light-center lamps in either reflector or glassware.
 - On Forms 45-H2, 45-H3, 45-H4, and 45-M1, adjustable receptacles allow operation of 5 $\frac{3}{8}$ -in. light-center lamp in reflector and 7-in. light-center lamp in glassware.
 3. On Forms 45-H1, 45-H2, and 45-H3, external tie lugs and binding posts facilitate installation and testing.
 4. Contour of sheet-metal reflectors increases efficiency and strength, prevents flexing of the metal and consequent chipping of enamel. Copper collar also relieves enamel surface of undue strain.
 5. Durability and interchangeability of cast-iron reflector with various glassware combinations enable assembly of various combinations of units with a few parts to meet local conditions. This results in lower maintenance and inventory charges.
 6. Nonferrous refractor and globe holders provide support for glassware, with dustproof and insectproof features.
 7. Rigid hinge and snap latch permit relamping from the ground with the aid of a "lamp picker."
 8. Interchangeability of parts.

LOCATION OF RECEPTACLE CLIPS

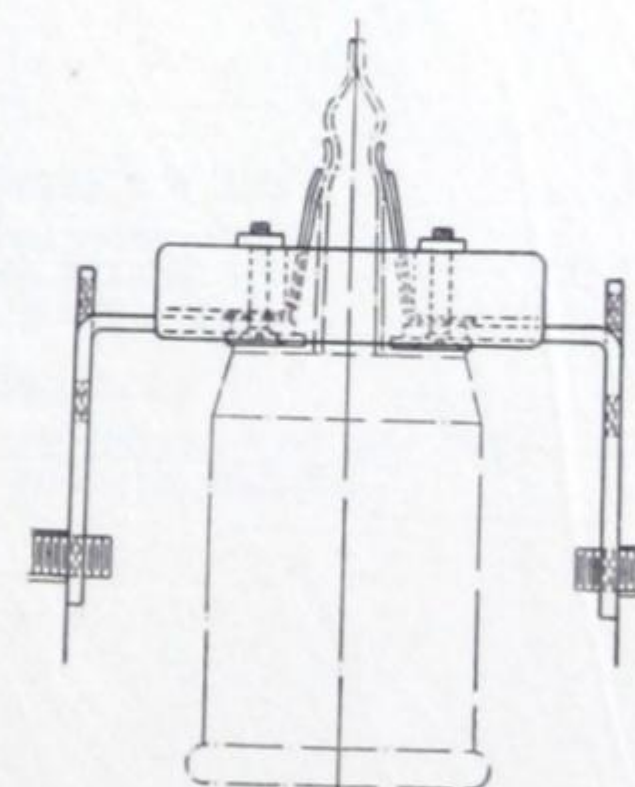
FORM 45-H1



Cat. No. 4865209G1, insulator
5 $\frac{3}{8}$ -in. light-center lamp in reflector position
7-in. light-center lamp in bowl- and band-refractor position



Cat. No. 4865209G2, insulator
7-in. light-center lamp in dome-refractor or No. 166 globe position
or No. 176 globe position



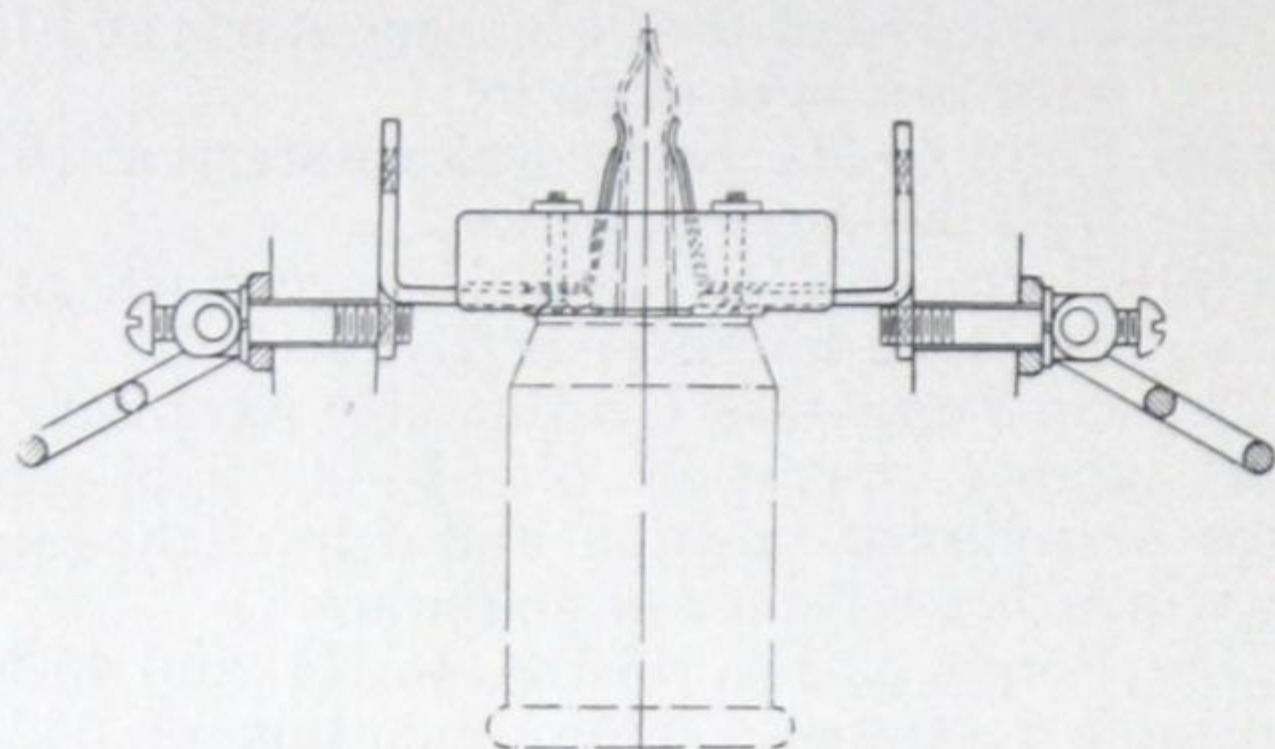
Cat. No. 4865209G3, insulator
7-in. light-center lamp in reflector position

FORMS 45-H AND 45-M NOVALUX SUSPENSION LUMINAIRES

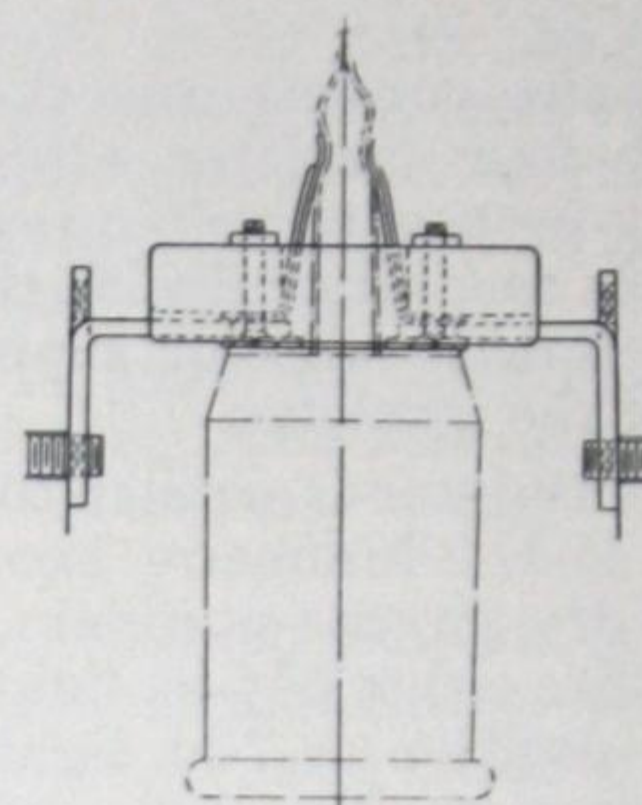
For Use on All Series Circuits

LOCATION OF RECEPTACLE CLIPS (Cont)

FORM 45-H2

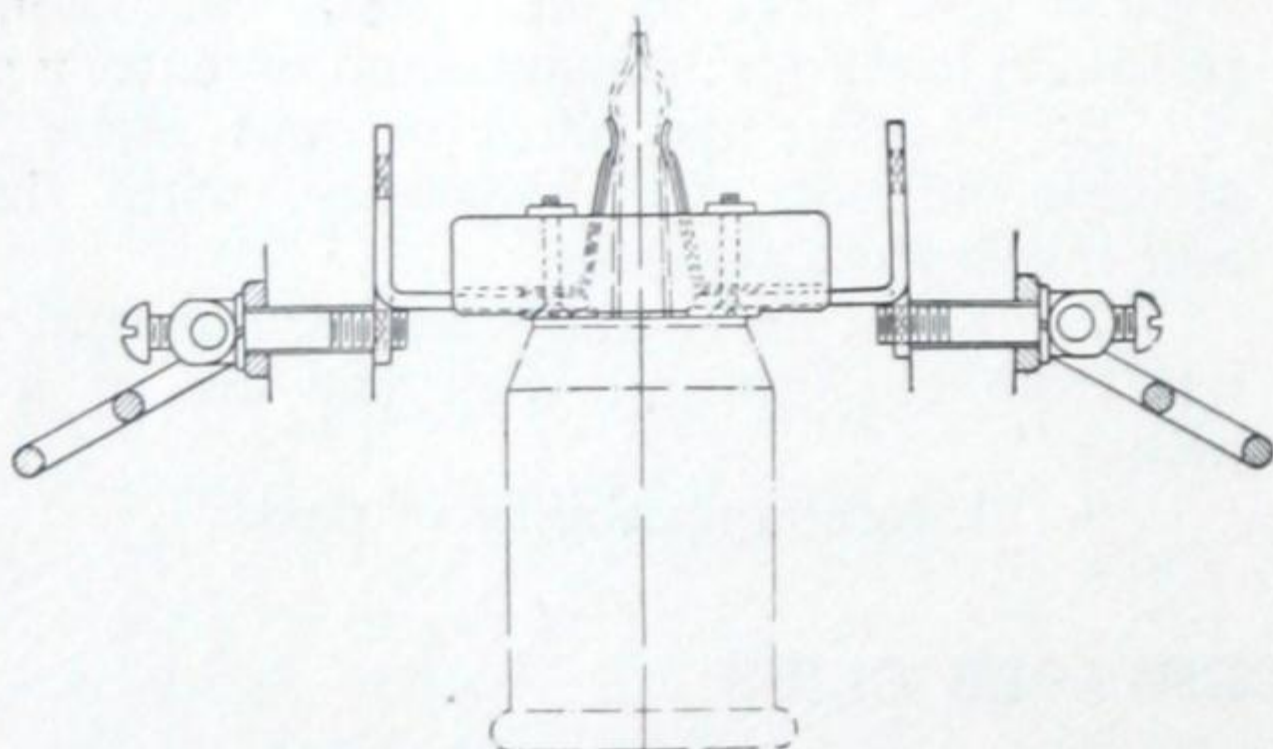


Cat. No. 4865207G1, insulator
7-in. light-center lamp in dome-refractor
or No. 166 globe position or
No. 176 globe position

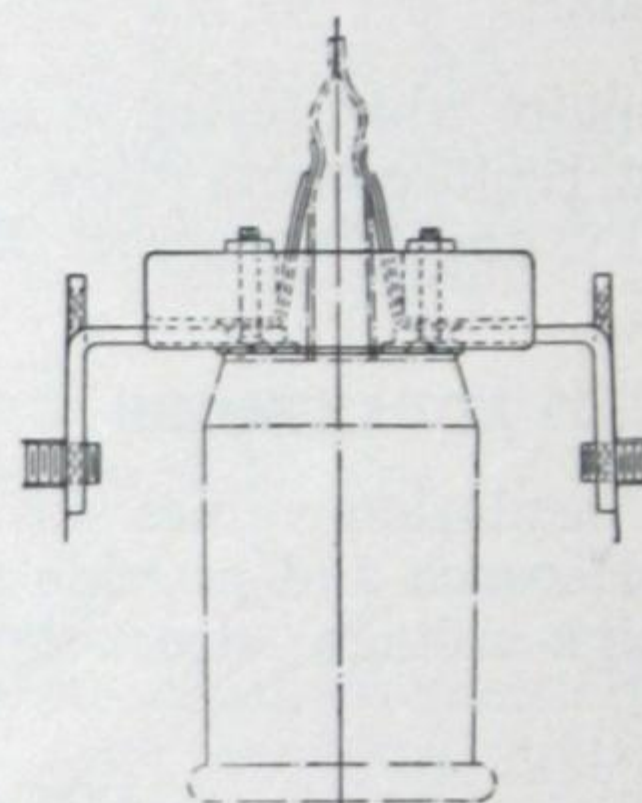


Cat. No. 4865207G2, insulator
5 3/8-in. light-center lamp in reflector position
7-in. light-center lamp in bowl- and
band-refractor position
7-in. light-center lamp in deep dome
reflector position

FORM 45-H3



Cat. No. 4865208G1, insulator
7-in. light-center lamp in dome-refractor
or No. 166 globe position or
No. 176 globe position

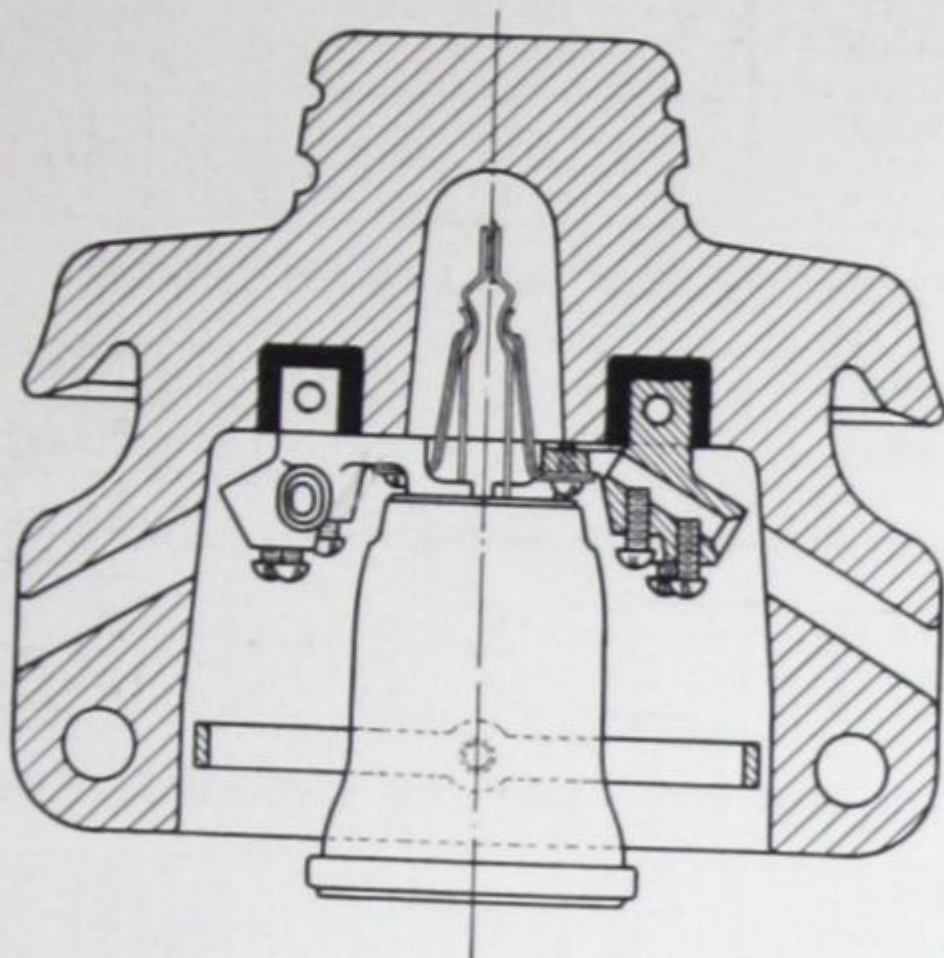


Cat. No. 4865208G2, insulator
5 3/8-in. light-center lamp in reflector position
7-in. light-center lamp in bowl- and
band-refractor position
7-in. light-center lamp in deep dome
reflector position

FORMS 45-H AND 45-M NOVALUX SUSPENSION LUMINAIRES

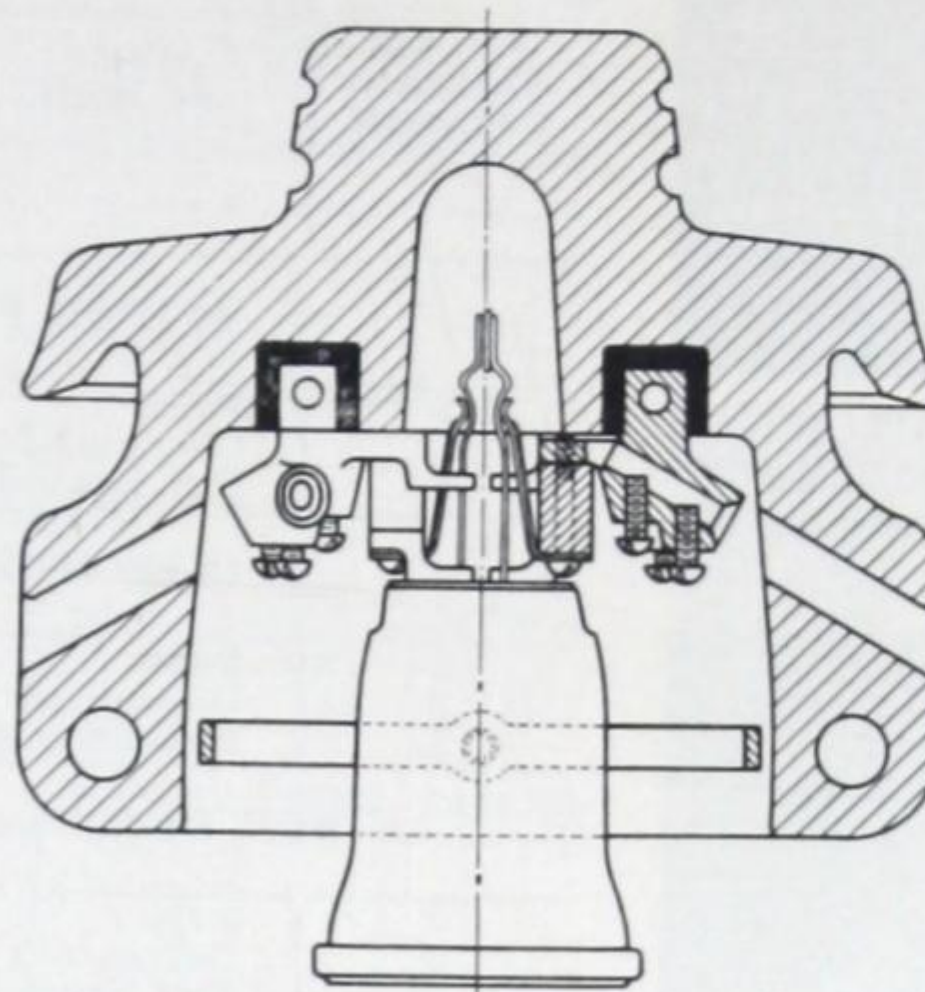
For Use on All Series Circuits

FORM 45-H4



Cat. No. 4865128G1

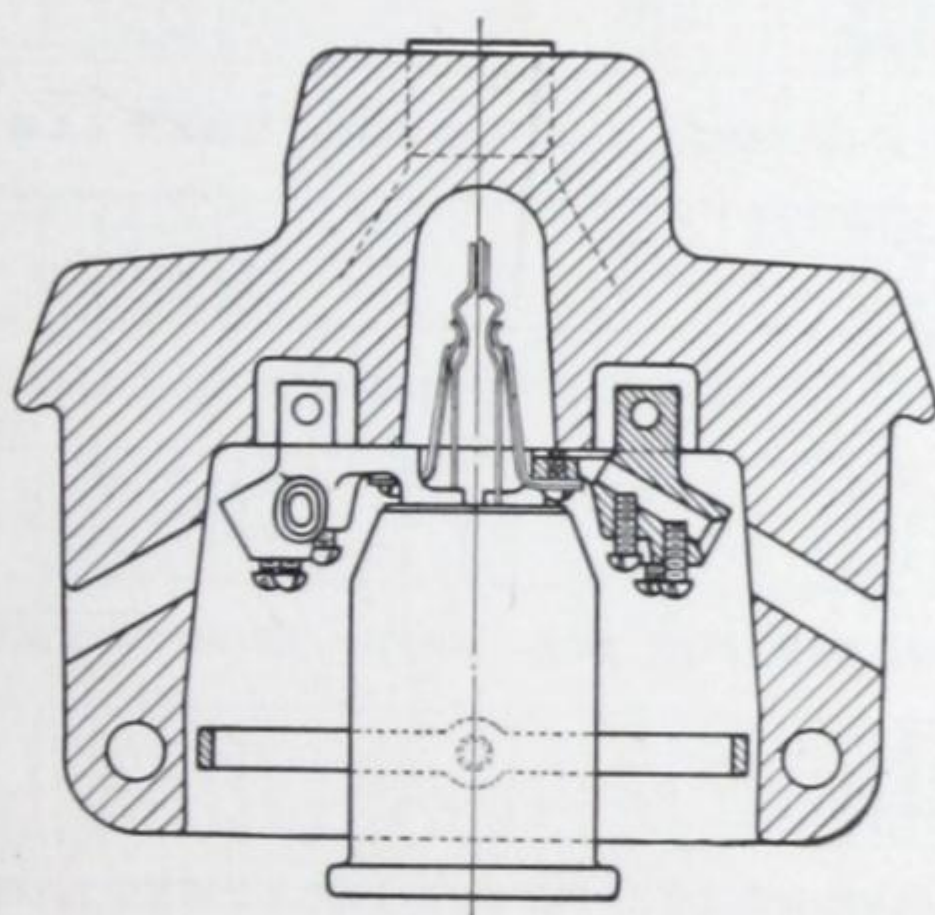
5 3/8-in. light-center lamp in reflector position
7-in. light-center lamp in band- and bowl-refractor position
7-in. light-center lamp in deep dome reflector position



Cat. No. 4865128G2

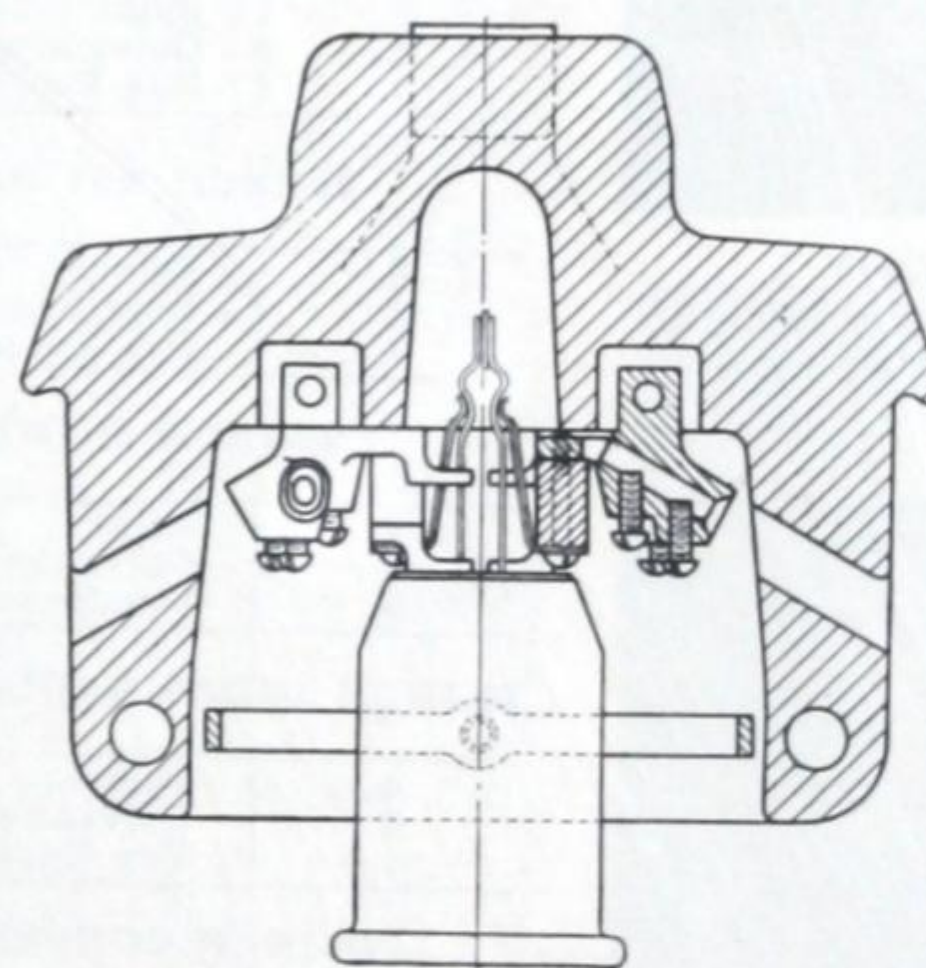
7-in. light-center lamp in dome-refractor or No. 166 globe position or No. 176 globe position

FORM 45-M1



Cat. No. 4865127G1

5 3/8-in. light-center lamp in reflector position
7-in. light-center lamp in band- and bowl-refractor position
7-in. light-center lamp in deep dome reflector position



Cat. No. 4865127G2

7-in. light-center lamp in dome refractor or No. 166 globe position or No. 176 globe position

FORM 45-H1 NOVALUX SUSPENSION LUMINAIRE

With Wet-process Porcelain Insulator for Use on All Series Circuits

WITH RADIAL-WAVE REFLECTOR



Fig. 1
(Photograph 721089)
Flat radial-wave



Fig. 2
(Photograph 721044)
Dome radial-wave



Fig. 3
(Photograph 721040)
Asy-radial-wave



Fig. 4
(Photograph 721041)
Dome shading



Fig. 5
(Photograph 721039)
Concentrating Asy-radial-wave

FIG. NO. Complete Luminaire	FINISH OF HOOD	* CAT. NO.	* LIST PRICE Class GO-51	APPROX WT IN LB		FIG. NO. OF PARTS †Refer to Pages 124 and 125 for Illus- trations, Descrip- tion, and Part Price										
				Net	Ship.	1	5	10	11	12	13	15	17	19		

20-INCH FLAT RADIAL-WAVE REFLECTOR FOR 1000-LUMEN LAMPS

1	Paint	3732040G184	\$16.65	21	29	A	A	X	A					
1	Galvanized	3732040G185	16.65	21	29	B	A	X	A					
1	Fire Enamel	3732040G186	17.15	21	29	C	A	X	A					

18-INCH DOME RADIAL-WAVE REFLECTOR FOR 1000-LUMEN LAMPS

2	Paint	14X438	\$16.65	22	30	A	A	X		X				
2	Galvanized	14X439	16.65	22	30	B	A	X		X				
2	Fire Enamel	14X440	17.15	22	30	C	A	X		X				

18-INCH DOME RADIAL-WAVE REFLECTOR FOR 2500-, 4000-, OR 6000-LUMEN LAMPS

2	Paint	14X444	\$16.65	22	30	A	C	X		X				
2	Galvanized	14X445	16.65	22	30	B	C	X		X				
2	Fire Enamel	14X446	17.15	22	30	C	C	X		X				

20-INCH DOME RADIAL-WAVE REFLECTOR FOR 1000-LUMEN LAMPS

2	Paint	14X441	\$17.15	23	31	A	A	X			A			
2	Galvanized	14X442	17.15	23	31	B	A	X			A			
2	Fire Enamel	14X443	17.65	23	31	C	A	X			A			

20-INCH DOME RADIAL-WAVE REFLECTOR FOR 2500-, 4000-, OR 6000-LUMEN LAMPS

2	Paint	14X447	\$17.15	23	31	A	C	X			X			
2	Galvanized	14X448	17.15	23	31	B	C	X			X			
2	Fire Enamel	14X449	17.65	23	31	C	C	X			X			

20-INCH ASY-RADIAL-WAVE REFLECTOR FOR 1000-LUMEN LAMPS

3	Paint	3732040G271	\$17.15	23	31	A	A	X				X		
3	Galvanized	3732040G272	17.15	23	31	B	A	X				X		
3	Fire Enamel	3732040G273	17.65	23	31	C	A	X				X		

20-INCH ASY-RADIAL-WAVE REFLECTOR FOR 2500-, 4000-, OR 6000-LUMEN LAMPS

3	Paint	3732040G274	\$17.15	23	31	A	C	X				X		
3	Galvanized	3732040G275	17.15	23	31	B	C	X				X		
3	Fire Enamel	3732040G276	17.65	23	31	C	C	X				X		

20-INCH DOME RADIAL-WAVE SHADING REFLECTOR FOR 1000-LUMEN LAMPS

4	Paint	3732040G193	\$18.65	23	31	A	A	X					A	
4	Galvanized	3732040G194	18.65	23	31	B	A	X					A	
4	Fire Enamel	3732040G195	19.15	23	31	C	A	X					A	

20-INCH DOME RADIAL-WAVE SHADING REFLECTOR FOR 2500-, 4000-, OR 6000-LUMEN LAMPS

4	Paint	3732040G268	\$18.65	23	31	A	C	X					X	
4	Galvanized	3732040G269	18.65	23	31	B	C	X					X	
4	Fire Enamel	3732040G270	19.15	23	31	C	C	X					X	

20-INCH CONCENTRATING ASY-RADIAL-WAVE REFLECTOR FOR 1000-LUMEN LAMPS

5	Paint	3732040G196	\$18.65	23	31	A	A	X					X	
5	Galvanized	3732040G197	18.65	23	31	B	A	X					X	
5	Fire Enamel	3732040G198	19.15	23	31	C	A	X					X	

20-INCH CONCENTRATING ASY-RADIAL-WAVE REFLECTOR FOR 2500-, 4000-, OR 6000-LUMEN LAMPS

5	Paint	3732040G199	\$18.65	23	31	A	C	X					X	
5	Galvanized	3732040G200	18.65	23	31	B	C	X					X	
5	Fire Enamel	3732040G201	19.15	23	31	C	C	X					X	

* Catalog numbers and prices do not include MAZDA lamps.

† Fixtures composed of parts indicated by "X" or letter "A, B, or C." Letter refers to description under the Fig. No. on pages 124 and 125.

For center-span suspension, order similar to above except with Cat. No. 16X901 hanger and outrigger arm as shown on page 125 and add \$7.00 to list price.

For use with straight-pipe bracket, order similar to above except with right-angle hood, Fig. 2, page 125, and add to list price \$4.60 for painted or galvanized hood and \$5.90 for fire-enameled hood.

For luminaire for internal wiring, order similar to above except for internal wiring and use same price.

FORM 45-H1 NOVALUX SUSPENSION LUMINAIRES

With Wet-process Porcelain Insulator for Use on All Series Circuits

WITH 14-INCH CAST-IRON REFLECTORS

FIG. NO. Complete Luminaire	FINISH OF HOOD AND REFLECTOR	* CAT. NO.	* LIST PRICE Class GO-51	SUPERSEDED CAT. NO.	APPROX WT IN LB		FIG. NO. OF PARTS †Refer to Pages 124 and 125 for Illustrations, Description, and Part Price												
					Net	Ship.	1	5	10	21	22	23	24	25	26	27	28	29	
REFLECTOR ONLY FOR 1000-LUMEN LAMPS																			
6	Paint	3732040G1	\$19.45	14X450	27	35	A	A	X	D									
6	Galv.	3732040G2	19.45	14X451	27	35	B	A	X	E									
6	Fire Enamel	3732040G3	23.55	14X452	27	35	C	A	X	F									
REFLECTOR ONLY FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																			
6	Paint	3732040G4	\$19.45	14X453	27	35	A	C	X	D									
6	Galv.	3732040G5	19.45	14X454	27	35	B	C	X	E									
6	Fire Enamel	3732040G6	23.55	14X455	27	35	C	C	X	F									
WITH 8-INCH BAND REFRACTOR, CAT. NO. 1327401, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																			
7	Paint	3732040G13	\$32.05	14X462	32	43	A	A	X	A	A			X					
7	Galv.	3732040G14	32.05	14X463	32	43	B	A	X	B	A			X					
7	Fire Enamel	3732040G15	36.15	14X464	32	43	C	A	X	C	A			X					
WITH SYM-ETRIC BOWL REFRACTOR, CAT. NO. 1340382, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																			
8	Paint	3732040G10	\$33.95	14X459	35	46	A	A	X	A	A					A			
8	Galv.	3732040G11	33.95	14X460	35	46	B	A	X	B	A					A			
8	Fire Enamel	3732040G12	38.05	14X461	35	46	C	A	X	C	A					A			
WITH B-SYM-ETRIC RIPPLED BOWL REFRACTOR, CAT. NO. 2346181, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																			
8	Paint	3732040G7	\$39.75	14X456	37	50	A	A	X	A	A					B			
8	Galv.	3732040G8	39.75	14X457	37	50	B	A	X	B	A					B			
8	Fire Enamel	3732040G9	43.85	14X458	37	50	C	A	X	C	A					B			
WITH HI-WAY RIPPLED BOWL REFRACTOR, CAT. NO. 3775699, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																			
8	Paint	3732040G22	\$39.75	1229474G352	37	50	A	A	X	A	A					C			
8	Galv.	3732040G23	39.75	1229474G353	37	50	B	A	X	B	A					C			
8	Fire Enamel	3732040G24	43.85	1229474G354	37	50	C	A	X	C	A					C			
WITH NO. 166 MEDIUM ALABASTER RIPPLED GLOBE, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																			
9	Paint	3732040G25	\$28.05	14X471	32	42	A	B	X	A			X				X		
9	Galv.	3732040G26	28.05	14X472	32	42	B	B	X	B			X				X		
9	Fire Enamel	3732040G27	32.15	14X473	32	42	C	B	X	C			X				X		
WITH NO. 166 LIGHT ALABASTER RIPPLED GLOBE AND SYM-ETRIC DOME REFRACTOR, CAT. NO. 3775686, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																			
9	Paint	3732040G28	\$40.05	14X474	36	50	A	B	X	A			X	X		A	X		
9	Galv.	3732040G29	40.05	14X475	36	50	B	B	X	B			X	X		A	X		
9	Fire Enamel	3732040G30	44.15	14X476	36	50	C	B	X	C			X	X		A	X		
WITH NO. 166 LIGHT ALABASTER RIPPLED GLOBE AND A-SYM-ETRIC DOME REFRACTOR, CAT. NO. 2346021, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																			
9	Paint	3732040G31	\$42.55	14X477	36	50	A	B	X	A			X	X		B	X		
9	Galv.	3732040G32	42.55	14X478	36	50	B	B	X	B			X	X		B	X		
9	Fire Enamel	3732040G33	46.65	14X479	36	50	C	B	X	C			X	X		B	X		
WITH NO. 166 LIGHT ALABASTER RIPPLED GLOBE AND B-SYM-ETRIC DOME REFRACTOR, CAT. NO. 2346129, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																			
9	Paint	3732040G34	\$42.55	14X480	36	50	A	B	X	A			X	X		C	X		
9	Galv.	3732040G35	42.55	14X481	36	50	B	B	X	B			X	X		C	X		
9	Fire Enamel	3732040G36	46.65	14X482	36	50	C	B	X	C			X	X		C	X		
WITH NO. 176 MEDIUM ALABASTER RIPPLED GLOBE FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																			
10	Paint	3732040G37	\$28.05		32	42	A	B	X	A			X				X		
10	Galv.	3732040G38	28.05		32	42	B	B	X	B			X				X		
10	Fire Enamel	3732040G39	32.15		32	42	C	B	X	C			X				X		
WITH NO. 176 LIGHT ALABASTER RIPPLED GLOBE AND SYM-ETRIC DOME REFRACTOR, CAT. NO. 3775686, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																			
10	Paint	3732040G40	\$40.05		36	50	A	B	X	A			X	X		A	X		
10	Galv.	3732040G41	40.05		36	50	B	B	X	B			X	X		A	X		
10	Fire Enamel	3732040G42	44.15		36	50	C	B	X	C			X	X		A	X		
WITH NO. 176 LIGHT ALABASTER RIPPLED GLOBE AND A-SYM-ETRIC DOME REFRACTOR, CAT. NO. 2346021, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																			
10	Paint	3732040G43	\$42.55		36	50	A	B	X	A			X	X		B	X		
10	Galv.	3732040G44	42.55		36	50	B	B	X	B			X	X		B	X		
10	Fire Enamel	3732040G45	46.65		36	50	C	B	X	C			X	X		B	X		
WITH NO. 176 LIGHT ALABASTER RIPPLED GLOBE AND B-SYM-ETRIC DOME REFRACTOR, CAT. NO. 2346129, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																			
10	Paint	3732040G46	\$42.55		36	50	A	B	X	A			X	X		C	X		
10	Galv.	3732040G47	42.55		36	50	B	B	X	B			X	X		C	X		
10	Fire Enamel	3732040G48	46.65		36	50	C	B	X	C			X	X		C	X		

* Catalog numbers and prices do not include MAZDA lamps.

† Fixtures composed of parts indicated by "X" or letter "A, B, C, D, E, or F." Letter refers to description under the Fig. No. on pages 124 and 125.

For center-span suspension, order similar to above except with Cat. No. 16X901 hanger and outrigger arm as shown on page 125 and add \$7.00 to list price.

For use with straight-pipe bracket, order similar to above except with right-angle hood, Fig. 2, page 125, and add to list price \$4.60 for painted or galvanized hood and \$5.90 for fire-enameled hood.

For luminaire for internal wiring, order similar to above except for internal wiring and use same price.

For luminaires with 14-in. cast-aluminum reflector, order similar to above and use the same price as with 14-in. cast-iron reflector, fire-enameled finish.

Luminaire with No. 176 globe may be equipped with light shield, Cat. No. 4830956G1. Add \$1.85 to list price.



Fig. 6
(Photograph 721043)
Reflector Only



Fig. 7
(Photograph 721042)
With band refractor



Fig. 8
(Photograph 721037)
With bowl refractor

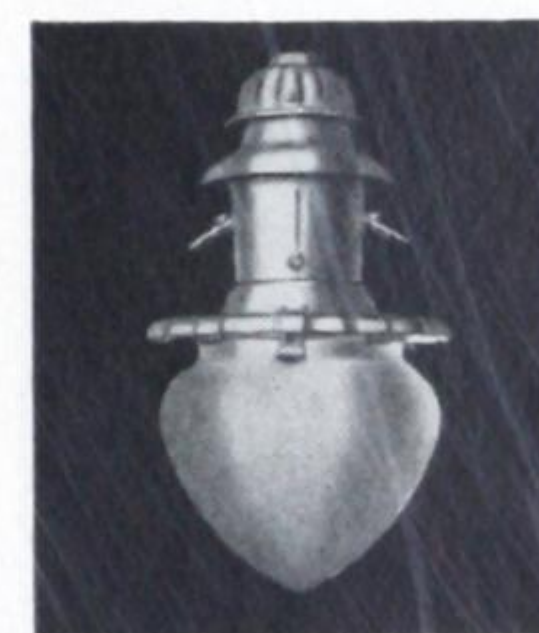


Fig. 9
(Photograph 721036)
With No. 166 globe

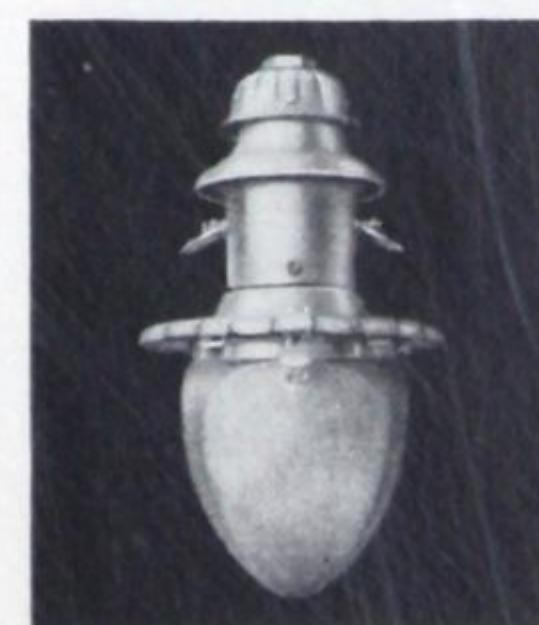


Fig. 10
(Photograph 721038)
With No. 176 globe

FORM 45-H2 NOVALUX SUSPENSION LUMINAIRES

With Wet-process Porcelain Insulator for Use on All Series Circuits

WITH RADIAL-WAVE REFLECTORS



Fig. 1
(Photograph 720402)
Flat radial-wave



Fig. 2
(Photograph 720769)
Dome radial-wave

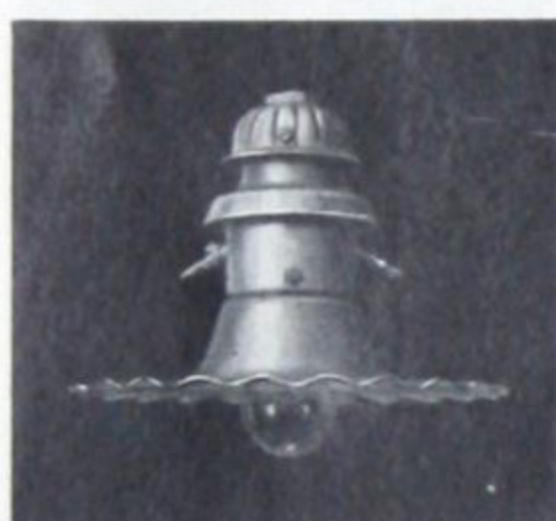


Fig. 3
(Photograph 720770)
Deep dome radial-wave



Fig. 4
(Photograph 720458)
Asy-radial-wave

FIG. NO. Complete Luminaire	FINISH OF HOOD	* CAT. NO.	* LIST PRICE Class GO-51	APPROX WT IN LB		FIG. NO. OF PARTS † Refer to Pages 124 and 125 for Illustrations, Descrip- tion, and Part Price													
				Net	Ship.	1	6	10	11	12	13	14	15	16	17	18	19	20	
20-INCH FLAT RADIAL-WAVE REFLECTOR FOR 1000-LUMEN LAMPS																			
1	Paint	3732040G202	\$16.65	21	29	A	B	X	A										
1	Galvanized	3732040G203	16.65	21	29	B	B	X	A										
1	Fire Enamel	3732040G204	17.15	21	29	C	B	X	A										
18-INCH DOME RADIAL-WAVE REFLECTOR FOR 1000-LUMEN LAMPS																			
2	Paint	33X29	\$16.65	22	30	A	B	X		X									
2	Galvanized	33X30	16.65	22	30	B	B	X		X									
2	Fire Enamel	33X31	17.15	22	30	C	B	X		X									
20-INCH DOME RADIAL-WAVE REFLECTOR FOR 1000-LUMEN LAMPS																			
2	Paint	33X32	\$17.15	23	31	A	B	X			A								
2	Galvanized	33X33	17.15	23	31	B	B	X			A								
2	Fire Enamel	33X34	17.65	23	31	C	B	X			A								
20-INCH DEEP DOME RADIAL-WAVE REFLECTOR FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																			
3	Paint	1229474G325	\$17.35	24	32	A	B	X			A								
3	Galvanized	1229474G326	17.35	24	32	B	B	X			A								
3	Fire Enamel	1229474G327	17.85	24	32	C	B	X			A								
20-INCH ASY-RADIAL-WAVE REFLECTOR FOR 1000-LUMEN LAMPS																			
4	Paint	3732040G277	\$17.15	23	31	A	B	X					X						
4	Galvanized	3732040G278	17.15	23	31	B	B	X					X						
4	Fire Enamel	3732040G279	17.65	23	31	C	B	X					X						
20-INCH ASY-RADIAL-WAVE REFLECTOR WITH LONG COLLAR FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																			
5	Paint	3732040G280	\$17.35	23	31	A	B	X							X				
5	Galvanized	3732040G281	17.35	23	31	B	B	X							X				
5	Fire Enamel	3732040G282	17.85	23	31	C	B	X							X				
20-INCH DOME RADIAL-WAVE SHADING REFLECTOR FOR 1000-LUMEN LAMPS																			
6	Paint	3732040G208	\$18.65	23	31	A	B	X								A			
6	Galvanized	3732040G209	18.65	23	31	B	B	X								A			
6	Fire Enamel	3732040G210	19.15	23	31	C	B	X								A			
20-INCH DEEP DOME RADIAL-WAVE SHADING REFLECTOR FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																			
7	Paint	3732040G214	\$18.85	24	32	A	B	X									X		
7	Galvanized	3732040G215	18.85	24	32	B	B	X									X		
7	Fire Enamel	3732040G216	19.35	24	32	C	B	X									X		
20-INCH CONCENTRATING ASY-RADIAL-WAVE REFLECTOR FOR 1000-LUMEN LAMPS																			
8	Paint	3732040G217	\$18.65	23	31	A	B	X									X		
8	Galvanized	3732040G218	18.65	23	31	B	B	X									X		
8	Fire Enamel	3732040G219	19.15	23	31	C	B	X									X		
20-INCH CONCENTRATING ASY-RADIAL-WAVE REFLECTOR, LONG COLLAR, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																			
9	Paint	3732040G220	\$18.85	23	31	A	B	X									X		
9	Galvanized	3732040G221	18.85	23	31	B	B	X									X		
9	Fire Enamel	3732040G222	19.35	23	31	C	B	X									X		

* Catalog numbers and prices do not include MAZDA lamps.

† Fixtures composed of parts indicated by "X" or letter "A, B, or C." Letter refers to description under the Fig. No. on pages 124 and 125.

For use with straight-pipe bracket, order similar to above except with right-angle hood, Fig. 2, page 125, and add to list price \$4.60 for painted or galvanized hood and \$5.90 for fire-enameled hood.

For luminaire for internal wiring, order similar to above except for internal wiring and use same price.



Fig. 5
(Photograph 720457)
Asy-radial-wave with
long collar



Fig. 6
(Photograph 720876)
Dome shading



Fig. 7
(Photograph 720804)
Deep dome shading



Fig. 8
(Photograph 720771)
Concentrating Asy-radial-
wave



Fig. 9
(Photograph 720805)
Concentrating Asy-radial-
wave, long collar

FORM 45-H2 NOVALUX SUSPENSION LUMINAIRES

With Wet-process Porcelain Insulator for Use on All Series Circuits

WITH 14-INCH CAST-IRON REFLECTOR

FIG. NO. Complete Luminaire	FINISH OF HOOD AND REFLECTOR	* CAT. NO.	* LIST PRICE Class GO-51	SUPERSEDED CAT. NO.	APPROX WT IN LB		FIG. NO. OF PARTS †Refer to Pages 124 and 125 for Illustrations, Description, and Part Price											
					Net	Ship.	1	6	10	21	22	23	24	25	26	27	28	29
REFLECTOR ONLY FOR 1000-LUMEN LAMPS																		
10	Paint	3732040G49	\$19.45	33X35	27	35	A	B	X	D								
10	Galv.	3732040G50	19.45	33X36	27	35	B	B	X	E								
10	Fire Enamel	3732040G51	23.55	33X37	27	35	C	B	X	F								
WITH 8-INCH BAND REFRACTOR, CAT. NO. 1327401, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																		
11	Paint	3732040G58	\$32.05	33X44	32	43	A	B	X	A	A			X				
11	Galv.	3732040G59	32.05	33X45	32	43	B	B	X	B	A			X				
11	Fire Enamel	3732040G60	36.15	33X46	32	43	C	B	X	C	A			X				
WITH SYM-ETRIC BOWL REFRACTOR, CAT. NO. 1340382, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																		
12	Paint	3732040G55	\$33.95	33X41	35	46	A	B	X	A	A					A		
12	Galv.	3732040G56	33.95	33X42	35	46	B	B	X	B	A					A		
12	Fire Enamel	3732040G57	38.05	33X43	35	46	C	B	X	C	A					A		
WITH B-SYM-ETRIC RIPPLED BOWL REFRACTOR, CAT. NO. 2346181, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																		
12	Paint	3732040G52	\$39.75	33X38	37	50	A	B	X	A	A					B		
12	Galv.	3732040G53	39.75	33X39	37	50	B	B	X	B	A					B		
12	Fire Enamel	3732040G54	43.85	33X40	37	50	C	B	X	C	A					B		
WITH HI-WAY RIPPLED BOWL REFRACTOR, CAT. NO. 3775699, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																		
12	Paint	3732040G67	\$39.75	1229474G355	37	50	A	B	X	A	A					C		
12	Galv.	3732040G68	39.75	1229474G356	37	50	B	B	X	B	A					C		
12	Fire Enamel	3732040G69	43.85	1229474G357	37	50	C	B	X	C	A					C		
WITH NO. 166 MEDIUM ALABASTER RIPPLED GLOBE FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																		
13	Paint	3732040G70	\$28.05	33X53	32	42	A	A	X	A				X				X
13	Galv.	3732040G71	28.05	33X54	32	42	B	A	X	B				X				X
13	Fire Enamel	3732040G72	32.15	33X55	32	42	C	A	X	C				X				X
WITH NO. 166 LIGHT ALABASTER RIPPLED GLOBE AND SYM-ETRIC DOME REFRACTOR, CAT. NO. 3775686, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																		
13	Paint	3732040G73	\$40.05	33X56	36	50	A	A	X	A			X	X			A	X
13	Galv.	3732040G74	40.05	33X57	36	50	B	A	X	B			X	X			A	X
13	Fire Enamel	3732040G75	44.15	33X58	36	50	C	A	X	C			X	X			A	X
WITH NO. 166 LIGHT ALABASTER RIPPLED GLOBE AND A-SYM-ETRIC DOME REFRACTOR, CAT. NO. 2346021, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																		
13	Paint	3732040G76	\$42.55	33X59	36	50	A	A	X	A			X	X			B	X
13	Galv.	3732040G77	42.55	33X60	36	50	B	A	X	B			X	X			B	X
13	Fire Enamel	3732040G78	46.65	33X61	36	50	C	A	X	C			X	X			B	X
WITH NO. 166 LIGHT ALABASTER RIPPLED GLOBE AND B-SYM-ETRIC DOME REFRACTOR, CAT. NO. 2346129, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																		
13	Paint	3732040G79	\$42.55	33X62	36	50	A	A	X	A			X	X			C	X
13	Galv.	3732040G80	42.55	33X63	36	50	B	A	X	B			X	X			C	X
13	Fire Enamel	3732040G81	46.65	33X64	36	50	C	A	X	C			X	X			C	X
WITH NO. 176 MEDIUM ALABASTER RIPPLED GLOBE FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																		
14	Paint	3732040G82	\$28.05		32	42	A	A	X	A				X				X
14	Galv.	3732040G83	28.05		32	42	B	A	X	B				X				X
14	Fire Enamel	3732040G84	32.15		32	42	C	A	X	C				X				X
WITH NO. 176 LIGHT ALABASTER RIPPLED GLOBE AND SYM-ETRIC DOME REFRACTOR, CAT. NO. 3775686, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																		
14	Paint	3732040G85	\$40.05		36	50	A	A	X	A			X	X			A	X
14	Galv.	3732040G86	40.05		36	50	B	A	X	B			X	X			A	X
14	Fire Enamel	3732040G87	44.15		36	50	C	A	X	C			X	X			A	X
WITH NO. 176 LIGHT ALABASTER RIPPLED GLOBE AND A-SYM-ETRIC DOME REFRACTOR, CAT. NO. 2346021, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																		
14	Paint	3732040G88	\$42.55		36	50	A	A	X	A			X	X			B	X
14	Galv.	3732040G89	42.55		36	50	B	A	X	B			X	X			B	X
14	Fire Enamel	3732040G90	46.65		36	50	C	A	X	C			X	X			B	X
WITH NO. 176 LIGHT ALABASTER RIPPLED GLOBE AND B-SYM-ETRIC DOME REFRACTOR, CAT. NO. 2346129, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																		
14	Paint	3732040G91	\$42.55		36	50	A	A	X	A			X	X			C	X
14	Galv.	3732040G92	42.55		36	50	B	A	X	B			X	X			C	X
14	Fire Enamel	3732040G93	46.65		36	50	C	A	X	C			X	X			C	X

* Catalog numbers and prices do not include MAZDA lamps.

† Fixtures composed of parts indicated by "X" or letter "A, B, C, D, E, or F." Letter refers to description under the Fig. No. on pages 124 and 125.

For use with straight-pipe bracket, order similar to above except with right-angle hood, Fig. 2, page 125, and add to list price \$4.60 for painted or galvanized hood and \$5.90 for fire-enameled hood.

For luminaire for internal wiring order similar to above except for internal wiring and use same price.

For luminaire with 14-in. cast-aluminum reflector, order similar to above and use the same price as with 14-in. cast-iron reflector, fire-enamel finish.

Luminaire with No. 176 globe may be equipped with light shield, Cat. No. 4830956G1. Add \$1.85 to list price.



Fig. 10
(Photograph 720767)
Reflector only



Fig. 11
(Photograph 720768)
With band refractor



Fig. 12
(Photograph 720403)
With bowl refractor



Fig. 13
(Photograph 720404)
With No. 166 globe



Fig. 14
(Photograph 720766)
With No. 176 globe

FORM 45-H3 NOVALUX SUSPENSION LUMINAIRES

With Wet-process Porcelain Insulator for Use on All Series Circuits

WITH RADIAL-WAVE REFLECTORS



Fig. 1
(Photograph 720405)
Flat radial-wave



Fig. 2
(Photograph 720806)
Dome radial-wave



Fig. 3
(Photograph 720809)
Deep dome radial-wave



Fig. 4
(Photograph 720460)
Asy-radial-wave

FIG. NO. Complete Luminaire	FINISH OF HOOD	CAT. NO.	* LIST PRICE Class GO-51	APPROX WT IN LB		FIG. NO. OF PARTS † Refer to Pages 124 and 125 for Illustrations, Description, and Part Price														
				Net	Ship.	3	7	10	11	12	13	14	15	16	17	18	19	20		
20-INCH FLAT RADIAL-WAVE REFLECTOR FOR 1000-LUMEN LAMPS																				
1	Paint	3732040G223	\$16.65	21	29	A	B	X	A											
1	Galv.	3732040G224	16.65	21	29	B	B	X	A											
1	Fire Enamel	3732040G225	17.15	21	29	C	B	X	A											
18-INCH DOME RADIAL-WAVE REFLECTOR FOR 1000-LUMEN LAMPS																				
2	Paint	38X991	\$16.65	22	30	A	B	X		X										
2	Galv.	38X992	16.65	22	30	B	B	X		X										
2	Fire Enamel	38X993	17.15	22	30	C	B	X		X										
20-INCH DOME RADIAL-WAVE REFLECTOR FOR 1000-LUMEN LAMPS																				
2	Paint	38X994	\$17.15	23	31	A	B	X			A									
2	Galv.	38X995	17.15	23	31	B	B	X			A									
2	Fire Enamel	38X996	17.65	23	31	C	B	X			A									
20-INCH DEEP DOME RADIAL-WAVE REFLECTOR FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																				
3	Paint	1229474G334	\$17.35	24	32	A	B	X			A									
3	Galv.	1229474G335	17.35	24	32	B	B	X			A									
3	Fire Enamel	1229474G336	17.85	24	32	C	B	X			A									
20-INCH ASY-RADIAL-WAVE REFLECTOR FOR 1000-LUMEN LAMPS																				
4	Paint	3732040G283	\$17.15	23	31	A	B	X					X							
4	Galv.	3732040G284	17.15	23	31	B	B	X					X							
4	Fire Enamel	3732040G285	17.65	23	31	C	B	X					X							
20-INCH ASY-RADIAL-WAVE REFLECTOR WITH LONG COLLAR FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																				
5	Paint	3732040G286	\$17.35	23	31	A	B	X							X					
5	Galv.	3732040G287	17.35	23	31	B	B	X							X					
5	Fire Enamel	3732040G288	17.85	23	31	C	B	X							X					
20-INCH DOME RADIAL-WAVE SHADING REFLECTOR FOR 1000-LUMEN LAMPS																				
6	Paint	3732040G229	\$18.65	23	31	A	B	X									X			
6	Galv.	3732040G230	18.65	23	31	B	B	X									X			
6	Fire Enamel	3732040G231	19.15	23	31	C	B	X									X			
20-INCH DEEP DOME RADIAL-WAVE SHADING REFLECTOR FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																				
7	Paint	3732040G235	\$18.85	24	32	A	B	X										A		
7	Galv.	3732040G236	18.85	24	32	B	B	X										A		
7	Fire Enamel	3732040G237	19.35	24	32	C	B	X										A		
20-INCH CONCENTRATING ASY-RADIAL-WAVE REFLECTOR FOR 1000-LUMEN LAMPS																				
8	Paint	3732040G238	\$18.65	23	31	A	B	X											X	
8	Galv.	3732040G239	18.65	23	31	B	B	X											X	
8	Fire Enamel	3732040G240	19.15	23	31	C	B	X											X	
20-INCH CONCENTRATING ASY-RADIAL-WAVE REFLECTOR WITH LONG COLLAR FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																				
9	Paint	3732040G241	\$18.85	23	31	A	B	X											X	
9	Galv.	3732040G242	18.85	23	31	B	B	X											X	
9	Fire Enamel	3732040G243	19.35	23	31	C	B	X											X	

* Catalog numbers and prices do not include MAZDA lamps.

† Fixtures composed of parts indicated by "X" or letter "A, B, or C." Letter refers to description under the Fig. No. on pages 124 and 125.

For use with straight-pipe bracket, order similar to above except with right-angle joint hood, Fig. 4, page 125, and add to list price \$2.00 for painted, galvanized, or fire-enameled hood.

For luminaire, for internal wiring, order similar to above except for internal wiring and use same price. Luminaires can be furnished with hoods with 3/4-in. pipe tap at same price.



Fig. 5
(Photograph 720459)
Asy-radial-wave
with long collar



Fig. 6
(Photograph 720875)
Dome shading



Fig. 7
(Photograph 720813)
Deep dome shading



Fig. 8
(Photograph 720811)
Concentrating
Asy-radial-wave



Fig. 9
(Photograph 720810)
Concentrating
Asy-radial-wave,
long collar

FORM 45-H3 NOVALUX SUSPENSION LUMINAIRES

With Wet-process Porcelain Insulator for Use on All Series Circuits

WITH 14-INCH CAST-IRON REFLECTORS

FIG. NO. Complete Luminaire	FINISH OF HOOD AND REFLECTOR	* CAT. NO.	* LIST PRICE Class GO-51	SUPERSEDED CAT. NO.	APPROX WT IN LB		FIG. NO. OF PARTS †Refer to Pages 124 and 125 for Illustrations, Descrip- tion, and Part Price											
					Net	Ship.	3	7	10	21	22	23	24	25	26	27	28	29
REFLECTOR ONLY FOR 1000-LUMEN LAMPS																		
10	Paint	3732040G94	\$19.45	38X997	27	35	A	B	X	D								
10	Galv.	3732040G95	19.45	38X998	27	35	B	B	X	E								
10	Fire Enam.	3732040G96	23.55	38X999	27	35	C	B	X	F								
WITH 8-INCH BAND REFRACTOR, CAT. NO. 1327401, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																		
11	Paint	3732040G103	\$32.05	39X7	32	43	A	B	X	A	A				X			
11	Galv.	3732040G104	32.05	39X8	32	43	B	B	X	B	A				X			
11	Fire Enam.	3732040G105	36.15	39X9	32	43	C	B	X	C	A				X			
WITH SYM-ETRIC BOWL REFRACTOR, CAT. NO. 1340382, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																		
12	Paint	3732040G100	\$33.95	39X4	35	46	A	B	X	A	A				A			
12	Galv.	3732040G101	33.95	39X5	35	46	B	B	X	B	A				A			
12	Fire Enam.	3732040G102	38.05	39X6	35	46	C	B	X	C	A				A			
WITH B-SYM-ETRIC RIPPLED BOWL REFRACTOR, CAT. NO. 2346181, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																		
12	Paint	3732040G97	\$39.75	39X1	37	50	A	B	X	A	A				B			
12	Galv.	3732040G98	39.75	39X2	37	50	B	B	X	B	A				B			
12	Fire Enam.	3732040G99	43.85	39X3	37	50	C	B	X	C	A				B			
WITH HI-WAY RIPPLED BOWL REFRACTOR, CAT. NO. 3775699, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																		
12	Paint	3732040G112	\$39.75	1229474G358	37	50	A	B	X	A	A				C			
12	Galv.	3732040G113	39.75	1229474G359	37	50	B	B	X	B	A				C			
12	Fire Enam.	3732040G114	43.85	1229474G360	37	50	C	B	X	C	A				C			
WITH NO. 166 MEDIUM ALABASTER RIPPLED GLOBE FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																		
13	Paint	3732040G115	\$28.05	39X16	32	42	A	A	X	A				X				X
13	Galv.	3732040G116	28.05	39X17	32	42	B	A	X	B				X				X
13	Fire Enam.	3732040G117	32.15	39X18	32	42	C	A	X	C				X				X
WITH NO. 166 LIGHT ALABASTER RIPPLED GLOBE AND SYM-ETRIC DOME REFRACTOR, CAT. NO. 3775686, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																		
13	Paint	3732040G118	\$40.05	39X19	36	50	A	A	X	A				X	X			A
13	Galv.	3732040G119	40.05	39X20	36	50	B	A	X	B				X	X			A
13	Fire Enam.	3732040G120	44.15	39X21	36	50	C	A	X	C				X	X			A
WITH NO. 166 LIGHT ALABASTER RIPPLED GLOBE AND A-SYM-ETRIC DOME REFRACTOR, CAT. NO. 2346021, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																		
13	Paint	3732040G121	\$42.55	39X22	36	50	A	A	X	A				X	X			B
13	Galv.	3732040G122	42.55	39X23	36	50	B	A	X	B				X	X			B
13	Fire Enam.	3732040G123	46.65	39X24	36	50	C	A	X	C				X	X			B
WITH NO. 166 LIGHT ALABASTER RIPPLED GLOBE AND B-SYM-ETRIC DOME REFRACTOR, CAT. NO. 2346129, FOR 2500-, 4000-, AND 6000-LUMEN LAMPS																		
13	Paint	3732040G124	\$42.55	39X25	36	50	A	A	X	A				X	X			C
13	Galv.	3732040G125	42.55	39X26	36	50	B	A	X	B				X	X			C
13	Fire Enam.	3732040G126	46.65	39X27	36	50	C	A	X	C				X	X			C
WITH NO. 176 MEDIUM ALABASTER RIPPLED GLOBE FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																		
14	Paint	3732040G127	\$28.05		32	42	A	A	X	A				X				X
14	Galv.	3732040G128	28.05		32	42	B	A	X	B				X				X
14	Fire Enam.	3732040G129	32.15		32	42	C	A	X	C				X				X
WITH NO. 176 LIGHT ALABASTER RIPPLED GLOBE AND SYM-ETRIC DOME REFRACTOR, CAT. NO. 3775686, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																		
14	Paint	3732040G130	\$40.05		36	50	A	A	X	A				X	X			A
14	Galv.	3732040G131	40.05		36	50	B	A	X	B				X	X			A
14	Fire Enam.	3732040G132	44.15		36	50	C	A	X	C				X	X			A
WITH NO. 176 LIGHT ALABASTER RIPPLED GLOBE AND A-SYM-ETRIC DOME REFRACTOR, CAT. NO. 2346021, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																		
14	Paint	3732040G133	\$42.55		36	50	A	A	X	A				X	X			B
14	Galv.	3732040G134	42.55		36	50	B	A	X	B				X	X			B
14	Fire Enam.	3732040G135	46.65		36	50	C	A	X	C				X	X			B
WITH NO. 176 LIGHT ALABASTER RIPPLED GLOBE AND B-SYM-ETRIC DOME REFRACTOR, CAT. NO. 2346129, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																		
14	Paint	3732040G136	\$42.55		36	50	A	A	X	A				X	X			C
14	Galv.	3732040G137	42.55		36	50	B	A	X	B				X	X			C
14	Fire Enam.	3732040G138	46.65		36	50	C	A	X	C				X	X			C

* Catalog numbers and prices do not include MAZDA lamps.

† Fixtures composed of parts indicated by "X" or letter "A, B, C, D, E, or F." Letter refers to description under the Fig. No. on pages 124 and 125.

For use with straight-pipe bracket, order similar to above except with right-angle joint hood, Fig. 4, page 125, and add to list price \$2.00 for painted, galvanized, or fire-enameled hood.

Luminaires can be furnished with hoods with 3/4-in. pipe tap at same price.

For luminaires with 14-in. cast-aluminum reflector, order similar to above and use same price as with 14-in. cast-iron reflector, fire-enamel finish.

Luminaire with No. 176 globe may be equipped with light shield, Cat. No. 4830956G1. Add \$1.85 to list price.

For luminaire for internal wiring, order similar to above except for internal wiring and use same price.



Fig. 10
(Photograph 720807)
Reflector only



Fig. 11
(Photograph 720812)
With band refractor



Fig. 12
(Photograph 720406)
With bowl refractor



Fig. 13
(Photograph 720407)
With No. 166 globe



Fig. 14
(Photograph 720808)
With No. 176 globe

FORM 45-H4 NOVALUX SUSPENSION LUMINAIRES

With Wet-process Porcelain Insulator for Use on All Series Circuits

WITH RADIAL-WAVE REFLECTORS



Fig. 1
(Photograph 720408)
Flat radial-wave



Fig. 2
(Photograph 718375)
Dome radial-wave

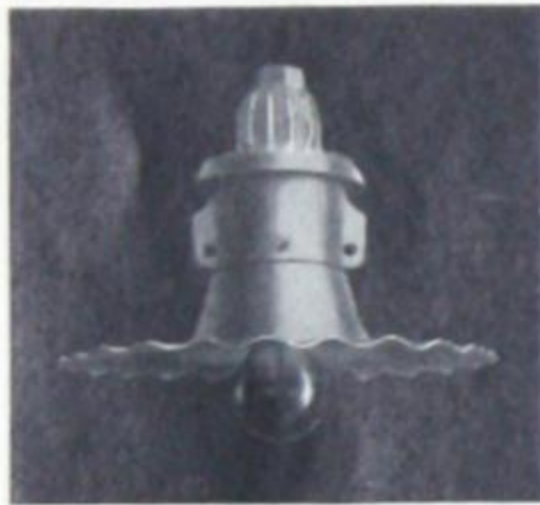


Fig. 3
(Photograph 718909)
Deep dome radial-wave



Fig. 4
(Photograph 720462)
Asy-radial-wave



Fig. 5
(Photograph 720461)
Asy-radial-wave
with long collar



Fig. 6
(Photograph 720874)
Dome shading



Fig. 7
(Photograph 720816)
Deep dome shading



Fig. 8
(Photograph 720814)
Concentrating
Asy-radial-wave



Fig. 9
(Photograph 720817)
Concentrating
Asy-radial-wave,
long collar

FIG. NO. Complete Luminaire	FINISH OF HOOD	* CAT. NO.	* LIST PRICE Class GO-51	APPROX WT IN LB		FIG. NO. OF PARTS † Refer to Pages 124 and 125 for Illustrations, Description, and Part Price														
				Net	Ship.	3	8	10	11	12	13	14	15	16	17	18	19	20		
20-INCH FLAT RADIAL-WAVE REFLECTOR FOR 1000-LUMEN LAMPS																				
1	Paint	3732040G244	\$16.65	21	29	A	A	X	A											
1	Galvanized	3732040G245	16.65	21	29	B	A	X	A											
1	Fire Enamel	3732040G246	17.15	21	29	C	A	X	A											
18-INCH DOME RADIAL-WAVE REFLECTOR FOR 1000-LUMEN LAMPS																				
2	Paint	1229474G253	\$16.65	22	30	A	A	X		X										
2	Galvanized	1229474G256	16.65	22	30	B	A	X		X										
2	Fire Enamel	1229474G259	17.15	22	30	C	A	X		X										
20-INCH DOME RADIAL-WAVE REFLECTOR FOR 1000-LUMEN LAMPS																				
2	Paint	1229474G254	\$17.15	23	31	A	A	X		A										
2	Galvanized	1229474G257	17.15	23	31	B	A	X		A										
2	Fire Enamel	1229474G260	17.65	23	31	C	A	X		A										
20-INCH DEEP DOME RADIAL-WAVE REFLECTOR FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																				
3	Paint	1229474G343	\$17.35	24	32	A	A	X		A										
3	Galvanized	1229474G344	17.35	24	32	B	A	X		A										
3	Fire Enamel	1229474G345	17.85	24	32	C	A	X		A										
20-INCH ASY-RADIAL-WAVE REFLECTOR FOR 1000-LUMEN LAMPS																				
4	Paint	3732040G289	\$17.15	23	31	A	A	X						X						
4	Galvanized	3732040G290	17.15	23	31	B	A	X						X						
4	Fire Enamel	3732040G291	17.65	23	31	C	A	X						X						
20-INCH ASY-RADIAL-WAVE REFLECTOR, WITH LONG COLLAR, FOR 2500-, 4000-, 6000-LUMEN LAMPS																				
5	Paint	3732040G292	\$17.35	23	31	A	A	X						X						
5	Galvanized	3732040G293	17.35	23	31	B	A	X						X						
5	Fire Enamel	3732040G294	17.85	23	31	C	A	X						X						
20-INCH DOME RADIAL-WAVE SHADING REFLECTOR FOR 1000-LUMEN LAMPS																				
6	Paint	3732040G250	\$18.65	23	31	A	A	X								A				
6	Galvanized	3732040G251	18.65	23	31	B	A	X								A				
6	Fire Enamel	3732040G252	19.15	23	31	C	A	X								A				
20-INCH DEEP DOME RADIAL-WAVE SHADING REFLECTOR FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																				
7	Paint	3732040G256	\$18.85	24	32	A	A	X									X			
7	Galvanized	3732040G257	18.85	24	32	B	A	X									X			
7	Fire Enamel	3732040G258	19.35	24	32	C	A	X									X			
20-INCH CONCENTRATING ASY-RADIAL-WAVE REFLECTOR FOR 1000-LUMEN LAMPS																				
8	Paint	3732040G259	\$18.65	23	31	A	A	X									X			
8	Galvanized	3732040G260	18.65	23	31	B	A	X									X			
8	Fire Enamel	3732040G261	19.15	23	31	C	A	X									X			
20-INCH CONCENTRATING ASY-RADIAL-WAVE REFLECTOR, WITH LONG COLLAR, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																				
9	Paint	3732040G262	\$18.85	23	31	A	A	X									X			
9	Galvanized	3732040G263	18.85	23	31	B	A	X									X			
9	Fire Enamel	3732040G264	19.35	23	31	C	A	X									X			

* Catalog numbers and prices do not include MAZDA lamps.

† Fixtures composed of parts indicated by "X" or letter "A, B, or C." Letter refers to description under the Fig. No. on pages 124 and 125.

For use with straight-pipe bracket, order similar to above except with right-angle hood, Fig. 4, page 125, and add to list price \$2.00 for painted, galvanized, or fire-enameled hood.

For luminaire for internal wiring, order similar to above except for internal wiring and use same price.

Luminaires can be furnished with hoods with 3/4-in. pipe tap at same price.

FORM 45-H4 NOVALUX SUSPENSION LUMINAIRES

With Wet-process Porcelain Insulator for Use on All Series Circuits

WITH 14-INCH CAST-IRON REFLECTORS

FIG. NO. Complete Luminaire	FINISH OF HOOD AND REFLECTOR	* CAT. NO.	* LIST PRICE Class GO-51	SUPERSEDED CAT. NO.	APPROX WT IN LB		FIG. NO. OF PARTS †Refer to Pages 124 and 125 for Illustrations, Description, and Part Price											
					Net	Ship.	3	8	10	21	22	23	24	25	26	27	28	29
REFLECTOR ONLY FOR 1000-LUMEN LAMPS																		
10	Paint	3732040G139	\$19.45	1229474G255	27	35	A	A	X	D								
10	Galv.	3732040G140	19.45	1229474G258	27	35	B	A	X	E								
10	Fire Enamel	3732040G141	23.55	1229474G261	27	35	C	A	X	F								
WITH 8-INCH BAND REFRACTOR, CAT. NO. 1327401, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																		
11	Paint	3732040G148	\$32.05	1229474G264	32	43	A	A	X	A	A				X			
11	Galv.	3732040G149	32.05	1229474G269	32	43	B	A	X	B	A				X			
11	Fire Enamel	3732040G150	36.15		32	43	C	A	X	C	A				X			
WITH SYM-ETRIC BOWL REFRACTOR, CAT. NO. 1340382, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																		
12	Paint	3732040G145	\$33.95	1229474G263	35	46	A	A	X	A	A					A		
12	Galv.	3732040G146	33.95	1229474G268	35	46	B	A	X	B	A					A		
12	Fire Enamel	3732040G147	38.05	1229474G273	35	46	C	A	X	C	A					A		
WITH B-SYM-ETRIC RIPPLED BOWL REFRACTOR, CAT. NO. 2346181, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																		
12	Paint	3732040G142	\$39.75	1229474G262	37	50	A	A	X	A	A					B		
12	Galv.	3732040G143	39.75	1229474G267	37	50	B	A	X	B	A					B		
12	Fire Enamel	3732040G144	43.85	1229474G272	37	50	C	A	X	C	A					B		
WITH HI-WAY RIPPLED BOWL REFRACTOR, CAT. NO. 3775699, FOR 2500-, 4000, OR 6000-LUMEN LAMPS																		
12	Paint	3732040G157	\$39.75	1229474G361	37	50	A	A	X	A	A					C		
12	Galv.	3732040G158	39.75	1229474G362	37	50	B	A	X	B	A					C		
12	Fire Enamel	3732040G159	43.85	1229474G363	37	50	C	A	X	C	A					C		
WITH NO. 166 MEDIUM ALABASTER RIPPLED GLOBE FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																		
13	Paint	3732040G160	\$28.05	1229474G277	32	42	A	B	X	A			X					X
13	Galv.	3732040G161	28.05	1229474G278	32	42	B	B	X	B			X					X
13	Fire Enamel	3732040G162	32.15	1229474G279	32	42	C	B	X	C			X					X
WITH NO. 166 LIGHT ALABASTER RIPPLED GLOBE AND SYM-ETRIC DOME REFRACTOR, CAT. NO. 3775686, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																		
13	Paint	3732040G163	\$40.05	1229474G280	36	50	A	B	X	A			X	X			A	X
13	Galv.	3732040G164	40.05	1229474G283	36	50	B	B	X	B			X	X			A	X
13	Fire Enamel	3732040G165	44.15	1229474G286	36	50	C	B	X	C			X	X			A	X
WITH NO. 166 LIGHT ALABASTER RIPPLED GLOBE AND A-SYM-ETRIC DOME REFRACTOR, CAT. NO. 2346021, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																		
13	Paint	3732040G166	\$42.55	1229474G281	36	50	A	B	X	A			X	X			B	X
13	Galv.	3732040G167	42.55	1229474G284	36	50	B	B	X	B			X	X			B	X
13	Fire Enamel	3732040G168	46.65	1229474G287	36	50	C	B	X	C			X	X			B	X
WITH NO. 166 LIGHT ALABASTER RIPPLED GLOBE AND B-SYM-ETRIC DOME REFRACTOR, CAT. NO. 2346129, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																		
13	Paint	3732040G169	\$42.55	1229474G282	36	50	A	B	X	A			X	X			C	X
13	Galv.	3732040G170	42.55	1229474G285	36	50	B	B	X	B			X	X			C	X
13	Fire Enamel	3732040G171	46.65	1229474G288	36	50	C	B	X	C			X	X			C	X
WITH NO. 176 MEDIUM ALABASTER RIPPLED GLOBE FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																		
14	Paint	3732040G172	\$28.05		32	42	A	B	X	A			X					X
14	Galv.	3732040G173	28.05		32	42	B	B	X	B			X					X
14	Fire Enamel	3732040G174	32.15		32	42	C	B	X	C			X					X
WITH NO. 176 LIGHT ALABASTER RIPPLED GLOBE AND SYM-ETRIC DOME REFRACTOR, CAT. NO. 3775686, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																		
14	Paint	3732040G175	\$40.05		36	50	A	B	X	A			X	X			A	X
14	Galv.	3732040G176	40.05		36	50	B	B	X	B			X	X			A	X
14	Fire Enamel	3732040G177	44.15		36	50	C	B	X	C			X	X			A	X
WITH NO. 176 LIGHT ALABASTER RIPPLED GLOBE AND A-SYM-ETRIC DOME REFRACTOR, CAT. NO. 2346021, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																		
14	Paint	3732040G178	\$42.55		36	50	A	B	X	A			X	X			B	X
14	Galv.	3732040G179	42.55		36	50	B	B	X	B			X	X			B	X
14	Fire Enamel	3732040G180	46.65		36	50	C	B	X	C			X	X			B	X
WITH NO. 176 LIGHT ALABASTER RIPPLED GLOBE AND B-SYM-ETRIC DOME REFRACTOR, CAT. NO. 2346129, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																		
14	Paint	3732040G181	\$42.55		36	50	A	B	X	A			X	X			C	X
14	Galv.	3732040G182	42.55		36	50	B	B	X	B			X	X			C	X
14	Fire Enamel	3732040G183	46.65		36	50	C	B	X	C			X	X			C	X

* Catalog numbers and prices do not include MAZDA lamps.

† Fixtures composed of parts indicated by "X" or letter "A, B, C, D, E, or F." Letter refers to description under the Fig. No. on pages 124 and 125.

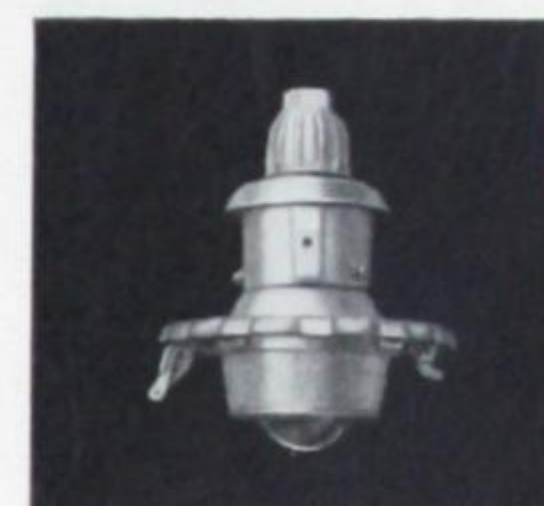
For use with straight-pipe bracket, order similar to above except with right-angle hood, Fig. 4, page 125, and add to list price \$2.00 for painted, galvanized, or fire-enameled hood.

For luminaire for internal wiring, order similar to above except for internal wiring and use same price.

Luminaires can be furnished with hoods with 3/4-in. pipe tap at same price.

For luminaire with 14-in. cast-aluminum reflector, order similar to above and use same price as with 14-in. cast-iron reflector, fire-enameled finish.

Luminaire with No. 176 globe may be equipped with light shield, Cat. No. 4830956G1. Add \$1.85 to list price.

Fig. 10
(Photograph 718378)
Reflector onlyFig. 11
(Photograph 720815)
With band refractorFig. 12
(Photograph 729409)
With bowl refractorFig. 13
(Photograph 720410)
With No. 166 globeFig. 14
(Photograph 720818)
With No. 176 globe

FORM 45-M1 NOVALUX SUSPENSION LUMINAIRES

With Dry-process Porcelain Insulator for Use on All Series Circuits

WITH RADIAL-WAVE REFLECTORS



Fig. 1
(Photograph 720419)
Flat radial-wave



Fig. 2
(Photograph 720422)
Dome radial-wave

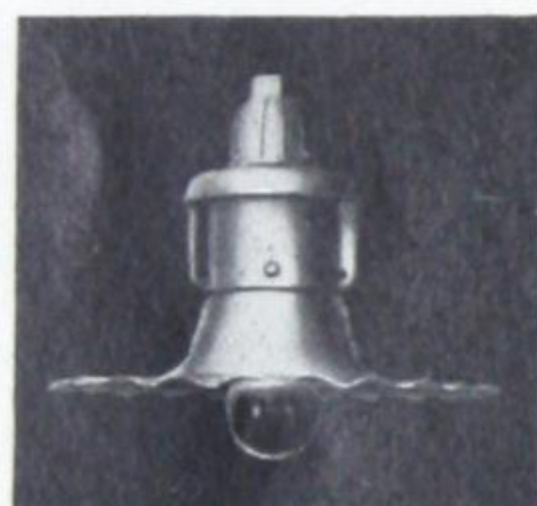


Fig. 3
(Photograph 720418)
Deep dome radial-wave



Fig. 4
(Photograph 720823)
Asy-radial-wave

FIG. NO. Complete Luminaire	FINISH OF HOOD	* CAT. NO.	* LIST PRICE Class GO-51	APPROX WT IN LB		FIG. NO. OF PARTS † Refer to Pages 124 and 125 for Illustrations, Description, and Part Price														
				Net	Ship.	3	9	10	11	12	13	14	15	16	17	18	19	20		
20-INCH FLAT RADIAL-WAVE REFLECTOR FOR 1000-LUMEN LAMPS																				
1	Paint	3732042G1	\$15.55	21	29	A	A	X	A											
1	Galvanized	3732042G2	15.55	21	29	B	A	X	A											
1	Fire Enamel	3732042G3	16.05	21	29	C	A	X	A											
18-INCH DOME RADIAL-WAVE REFLECTOR FOR 1000-LUMEN LAMPS																				
2	Paint	3732042G7	\$15.55	22	30	A	A	X		X										
2	Galvanized	3732042G8	15.55	22	30	B	A	X		X										
2	Fire Enamel	3732042G9	16.05	22	30	C	A	X		X										
20-INCH DOME RADIAL-WAVE REFLECTOR FOR 1000-LUMEN LAMPS																				
2	Paint	3732042G4	\$16.05	23	31	A	A	X			A									
2	Galvanized	3732042G5	16.05	23	31	B	A	X			A									
2	Fire Enamel	3732042G6	16.55	23	31	C	A	X			A									
20-INCH DEEP DOME RADIAL-WAVE REFLECTOR FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																				
3	Paint	3732042G13	\$16.25	24	32	A	A	X			A									
3	Galvanized	3732042G14	16.25	24	32	B	A	X			A									
3	Fire Enamel	3732042G15	16.75	24	32	C	A	X			A									
20-INCH ASY-RADIAL-WAVE REFLECTOR FOR 1000-LUMEN LAMPS																				
4	Paint	3732042G10	\$16.05	23	31	A	A	X						X						
4	Galvanized	3732042G11	16.05	23	31	B	A	X						X						
4	Fire Enamel	3732042G12	16.55	23	31	C	A	X						X						
20-INCH ASY-RADIAL-WAVE REFLECTOR, WITH LONG COLLAR, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																				
5	Paint	3732042G79	\$16.25	23	31	A	A	X							X					
5	Galvanized	3732042G80	16.25	23	31	B	A	X							X					
5	Fire Enamel	3732042G81	16.75	23	31	C	A	X							X					
20-INCH DOME RADIAL-WAVE SHADING REFLECTOR FOR 1000-LUMEN LAMPS																				
6	Paint	3732042G64	\$17.55	23	31	A	A	X								A				
6	Galvanized	3732042G65	17.55	23	31	B	A	X								A				
6	Fire Enamel	3732042G66	18.05	23	31	C	A	X								A				
20-INCH DEEP-DOME RADIAL-WAVE SHADING REFLECTOR FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																				
7	Paint	3732042G70	\$17.75	24	32	A	A	X										X		
7	Galvanized	3732042G71	17.75	24	32	B	A	X										X		
7	Fire Enamel	3732042G72	18.25	24	32	C	A	X										X		
20-INCH CONCENTRATING ASY-RADIAL-WAVE REFLECTOR FOR 1000-LUMEN LAMPS																				
8	Paint	3732042G73	\$17.55	23	31	A	A	X											X	
8	Galvanized	3732042G74	17.55	23	31	B	A	X											X	
8	Fire Enamel	3732042G75	18.05	23	31	C	A	X											X	
20-INCH CONCENTRATING ASY-RADIAL-WAVE REFLECTOR, WITH LONG COLLAR, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																				
9	Paint	3732042G76	\$17.75	23	31	A	A	X											X	
9	Galvanized	3732042G77	17.75	23	31	B	A	X											X	
9	Fire Enamel	3732042G78	18.25	23	31	C	A	X											X	

* Catalog numbers and prices do not include MAZDA lamps.

† Fixtures composed of parts indicated by "X" or letter "A, B, or C." Letter refers to description under the Fig. No. on pages 124 and 125.

For use with straight-pipe bracket, order similar to above except with right-angle hood, Fig. 4, page 125, and add to list price \$2.00 for painted, galvanized, or fire-enameled hood.

Luminaires can be furnished with hoods for 3/4-in. pipe tap at same price.



Fig. 5
(Photograph 720825)
Asy-radial-wave with long collar



Fig. 6
(Photograph 720873)
Dome shading



Fig. 7
(Photograph 720824)
Deep dome shading



Fig. 8
(Photograph 720833)
Concentrating Asy-radial-wave



Fig. 9
(Photograph 720821)
Concentrating Asy-radial-wave, long collar

FORM 45-M1 NOVALUX SUSPENSION LUMINAIRES

With Dry-process Porcelain Insulator for Use on All Series Circuits

WITH 14-INCH CAST-IRON REFLECTORS

FIG. NO. Complete Luminaire	FINISH OF HOOD AND REFLECTOR	* CAT. NO.	* LIST PRICE Class GO-51	APPROX WT IN LB		FIG. NO. OF PARTS † Refer to Pages 124 and 125 for Illustrations, Description, and Part Price													
				Net	Ship.	3	9	10	21	22	23	24	25	26	27	28	29		
REFLECTOR ONLY FOR 1000-LUMEN LAMPS																			
10	Paint	3732042G16	\$18.35	27	35	A	A	X	D										
10	Galv	3732042G17	18.35	27	35	B	A	X	E										
10	Fire Enamel	3732042G18	22.45	27	35	C	A	X	F										
WITH 8-INCH BAND REFRACTOR, CAT. NO. 1327401, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																			
11	Paint	3732042G25	\$30.95	32	43	A	A	X	A	A				X					
11	Galv	3732042G26	30.95	32	43	B	A	X	B	A				X					
11	Fire Enamel	3732042G27	35.05	32	43	C	A	X	C	A				X					
WITH SYM-ETRIC BOWL REFRACTOR, CAT. NO. 1340382, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																			
12	Paint	3732042G22	\$32.85	35	46	A	A	X	A	A						A			
12	Galv	3732042G23	32.85	35	46	B	A	X	B	A						A			
12	Fire Enamel	3732042G24	36.95	35	46	C	A	X	C	A						A			
WITH B-SYM-ETRIC RIPPLED BOWL REFRACTOR, CAT. NO. 2346181, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																			
12	Paint	3732042G19	\$38.65	37	50	A	A	X	A	A						B			
12	Galv	3732042G20	38.65	37	50	P	A	X	B	A						B			
12	Fire Enamel	3732042G21	42.75	37	50	C	A	X	C	A						B			
WITH HI-WAY RIPPLED BOWL REFRACTOR, CAT. NO. 3775699, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																			
12	Paint	3732042G34	\$38.65	37	50	A	A	X	A	A						C			
12	Galv	3732042G35	38.65	37	50	B	A	X	B	A						C			
12	Fire Enamel	3732042G36	42.75	37	50	C	A	X	C	A						C			
WITH NO. 166 MEDIUM ALABASTER RIPPLED GLOBE FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																			
13	Paint	3732042G37	\$26.95	32	42	A	B	X	A			X						X	
13	Galv	3732042G38	26.95	32	42	B	B	X	B			X						X	
13	Fire Enamel	3732042G39	31.05	32	42	C	B	X	C			X						X	
WITH NO. 166 LIGHT ALABASTER RIPPLED GLOBE AND SYM-ETRIC DOME REFRACTOR, CAT. NO. 3775686, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																			
13	Paint	3732042G40	\$38.95	36	50	A	B	X	A			X	X			A	X		
13	Galv	3732042G41	38.95	36	50	B	B	X	B			X	X			A	X		
13	Fire Enamel	3732042G42	43.05	36	50	C	B	X	C			X	X			A	X		
WITH NO. 166 LIGHT ALABASTER RIPPLED GLOBE AND A-SYM-ETRIC DOME REFRACTOR, CAT. NO. 2346021, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																			
13	Paint	3732042G43	\$41.45	36	50	A	B	X	A			X	X			B	X		
13	Galv	3732042G44	41.45	36	50	B	B	X	B			X	X			B	X		
13	Fire Enamel	3732042G45	45.55	36	50	C	B	X	C			X	X			B	X		
WITH NO. 166 LIGHT ALABASTER RIPPLED GLOBE AND B-SYM-ETRIC DOME REFRACTOR, CAT. NO. 2346129, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																			
13	Paint	3732042G46	\$41.45	36	50	A	B	X	A			X	X			C	X		
13	Galv	3732042G47	41.45	36	50	B	B	X	B			X	X			C	X		
13	Fire Enamel	3732042G48	45.55	36	50	C	B	X	C			X	X			C	X		
WITH NO. 176 MEDIUM ALABASTER RIPPLED GLOBE FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																			
14	Paint	3732042G49	\$26.95	32	42	A	B	X	A			X						X	
14	Galv	3732042G50	26.95	32	42	B	B	X	B			X						X	
14	Fire Enamel	3732042G51	31.05	32	42	C	B	X	C			X						X	
WITH NO. 176 LIGHT ALABASTER RIPPLED GLOBE AND SYM-ETRIC DOME REFRACTOR, CAT. NO. 3775686, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																			
14	Paint	3732042G52	\$38.95	36	50	A	B	X	A			X	X			A	X		
14	Galv	3732042G53	38.95	36	50	B	B	X	B			X	X			A	X		
14	Fire Enamel	3732042G54	43.05	36	50	C	B	X	C			X	X			A	X		
WITH NO. 176 LIGHT ALABASTER RIPPLED GLOBE AND A-SYM-ETRIC DOME REFRACTOR, CAT. NO. 2346021, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																			
14	Paint	3732042G55	\$41.45	36	50	A	B	X	A			X	X			B	X		
14	Galv	3732042G56	41.45	36	50	B	B	X	B			X	X			B	X		
14	Fire Enamel	3732042G57	45.55	36	50	C	B	X	C			X	X			B	X		
WITH NO. 176 LIGHT ALABASTER RIPPLED GLOBE AND B-SYM-ETRIC DOME REFRACTOR, CAT. NO. 2346129, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																			
14	Paint	3732042G58	\$41.45	36	50	A	B	X	A			X	X			C	X		
14	Galv	3732042G59	41.45	36	50	B	B	X	B			X	X			C	X		
14	Fire Enamel	3732042G60	45.55	36	50	C	B	X	C			X	X			C	X		

* Catalog numbers and prices do not include MAZDA lamps.

† Fixtures composed of parts indicated by "X" or letter "A, B, C, D, E, or F." Letter refers to description under the Fig. No. on pages 124 and 125.

For use with straight-pipe bracket, order similar to above except with right-angle hood, Fig. 4, page 125, and add to list price \$2.00 for painted, galvanized, or fire-enamelled hood.

Luminaires can be furnished with hoods with 3/4-in. pipe tap at same price.

For luminaire with 14-in. cast-aluminum reflector, order similar to above and use same price as with 14-in. cast-iron reflector, fire-enamel finish.

Luminaire with No. 176 globe may be equipped with light shield, Cat. No. 4830956G1. Add \$1.85 to list price.

Fig. 10
(Photograph 720822)
Reflector onlyFig. 11
(Photograph 720820)
With band refractorFig. 12
(Photograph 720421)
With bowl refractorFig. 13
(Photograph 720420)
With No. 166 globeFig. 14
(Photograph 720819)
With No. 176 globe

FORMS 45-H AND 45-M NOVALUX SUSPENSION LUMINAIRES

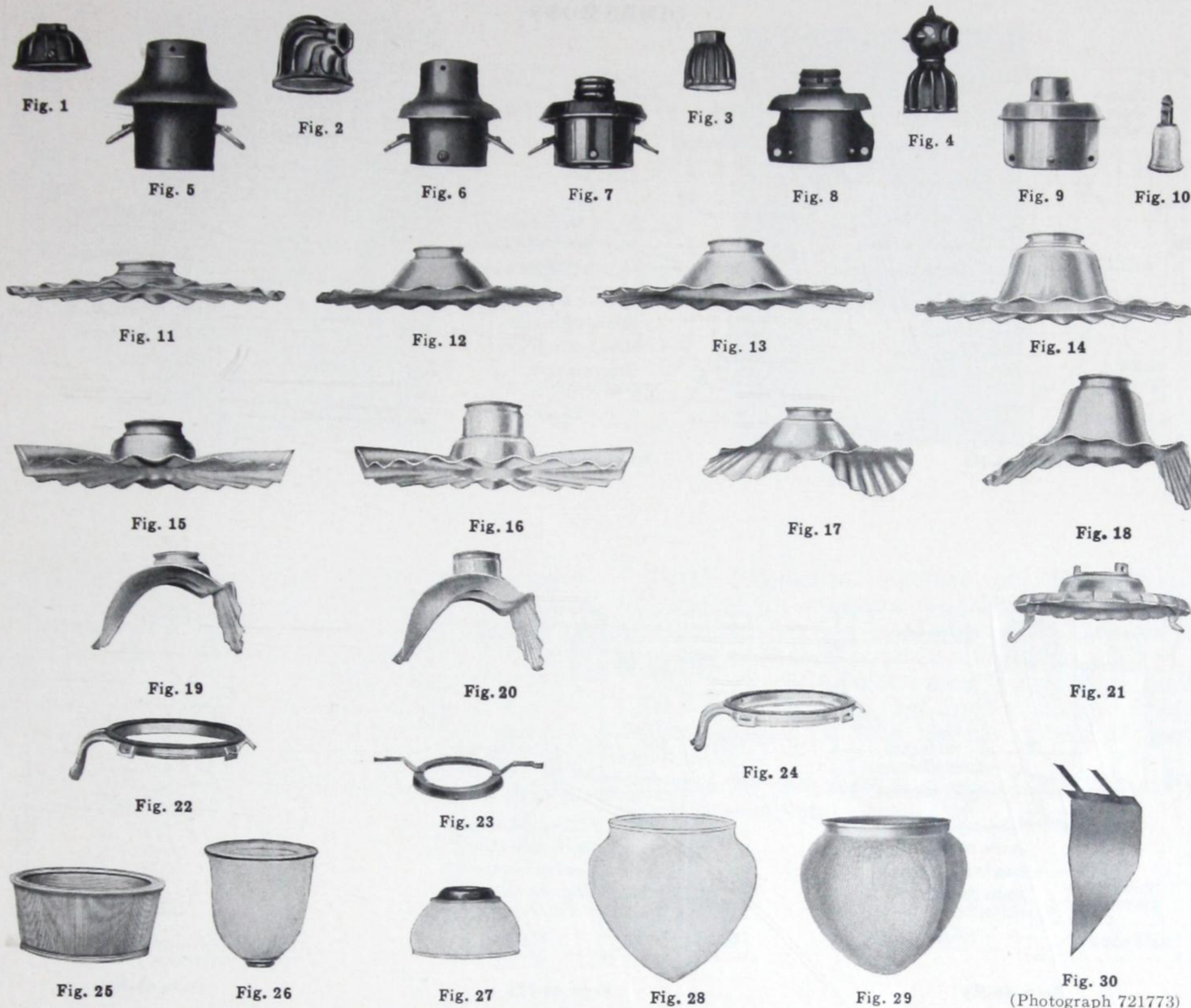
For Use on All Series Circuits

PART INFORMATION

FIG. NO.	DESCRIPTION	FINISH	FORM NO. OF UNIT USED ON	CAT. NO.	LIST PRICE Class GO-51	SUPERSEDED CAT. NO.
1A 1B 1C	Hood, Shallow.....	{ Green Paint Galvanized Fire Enamel }	45-H1 and 45-H2	{ 3740147G1 3740147G2 3740147G3 }	\$1.40 1.40 1.90	
2A 2B 2C	Hood, Right-angle.....	{ Green Paint Galvanized Fire Enamel }	45-H1 and 45-H2	{ 3740148G1 3740148G2 3740148G3 }	6.00 6.00 7.80	
3A 3B 3C	Hood, Small, 1¼-in. Pipe Tap.....	{ Green Paint Galvanized Fire Enamel }	45-H3, 45-H4, and 45-M1	{ 3740898G3 3740898G2 3740898G4 }	1.40 1.40 1.90	
3D 3E	Hood, Small, ¾-in. Pipe Tap.....	{ Green Paint Galvanized }	45-H3, 45-H4, and 45-M1	{ 3740899G3 3740899G2 }	1.40 1.40	
4A 4B 4C	Hood, Right-angle Joint.....	{ Green Paint Galvanized Fire Enamel }	45-H3, 45-H4, and 45-M1	{ 110918 20X964 61X603 }	3.40 3.40 3.90	
5A 5B 5C	Main Insulator, Wet-process.....	Green Glaze	45-H1	{ 4865209G1 4865209G2 4865209G3 }	9.45 9.45 9.45	3740079G12 3740079G1 3740079G13 3740079G2 3740079G14 3740079G3
6A 6B	Main Insulator, Wet-process.....	Green Glaze	45-H2	{ 4865207G1 4865207G2 }	9.45 9.45	3758156G1 3758156G2
7A 7B	Main Insulator, Wet-process.....	Green Glaze	45-H3	{ 4865208G1 4865208G2 }	9.45 9.45	3758157G7 3758157G1 3758157G11 3758157G2
8A 8B	Main Insulator, Wet-process.....	Green Glaze	45-H4	{ 4865128G1 4865128G2 }	9.45 9.45	4815183G1 4815183G2
9A 9B	Main Insulator, Dry-process.....	Green Glaze	45-M1	{ 4865127G1 4865127G2 }	8.35 8.35	4830094G1 4830094G2
10 11A	Series Socket..... 20-in. Flat Radial-wave Reflector.....	 Fire Enamel	..... .....	4815866G1 4888496	1.40 4.40	25711 46219
11B 12	20-in. Flat Radial-wave Reflector..... 18-in. Dome Radial-wave Reflector.....	Alzak Aluminum Fire Enamel	..... .....	4878192 2383057	5.00 4.40	
13A 13B	20-in. Dome Radial-wave Reflector..... 20-in. Dome Radial-wave Reflector.....	Fire Enamel Alzak Aluminum	..... .....	2383058 4878086	4.90 5.50	
14A 14B 15	20-in. Deep Dome Radial-wave Reflector..... 20-in. Deep Dome Radial-wave Reflector..... 20-in. Asy-radial-wave Reflector, Short Collar	Fire Enamel Alzak Aluminum Fire Enamel	..... ..... .....	4897140 4878607 2393010	5.10 5.70 4.90	
16 17A	20-in. Asy-radial-wave Reflector, Long Collar. 20-in. Dome Radial-wave Shading Reflector..	{ Fire Enamel }	{ }	{ 3775540 4884193 }	5.10 6.40	2393024
17B 18	20-in. Dome Radial-wave Shading Reflector .. 20-in. Deep Dome Radial-wave Shading Reflector	Alzak Aluminum Fire Enamel	..... .....	4881996 4884560	7.00 6.60	
19 20	20-in. Concentrating Asy-radial-wave Reflector, Short collar..... 20-in. Concentrating Asy-radial-wave Reflector, Long collar.....	Fire Enamel Fire Enamel	..... .....	4884190 4884191	6.40 6.60	
21A 21B 21C	14-in. Cast-iron Reflector with Hinge and Latch	{ Green Paint Galvanized Fire Enamel }	..... ..... .....	{ 4830263G4 4830263G5 4830263G6 }	7.20 7.20 10.80	3740207G6 3740207G21 3740207G2
21D 21E 21F	14-in. Cast-iron Reflector without Hinge and Latch.....	{ Green Paint Galvanized Fire Enamel }	..... ..... .....	{ 4830263G1 4830263G2 4830263G3 }	7.20 7.20 10.80	3740207G5 3740207G20 3740207G1
22A 22B	Band- or Bowl-refractor Holder..... Combination Bowl-refractor and Globe holder.	Natural Aluminum Natural Aluminum	..... .....	4830261G1 4830261G2	3.00 3.50	
23 24	Dome-refractor Holder..... Globe Holder.....	Natural Aluminum	..... .....	4888001 4815896G1	.50 3.00	2378585
25	8-in. Band Refractor.....	.....	.....	1327401	9.60	
26A 26B 26C	SYM-ETRIC Bowl Refractor..... B-SYM-ETRIC Rippled-bowl Refractor..... HI-WAY Rippled-bowl Refractor.....	..... ..... .....	..... ..... .....	1340382 2346181 3775699	11.50 17.30 17.30	
27A 27B 27C	SYM-ETRIC Dome Refractor..... A-SYM-ETRIC Dome Refractor..... B-SYM-ETRIC Dome Refractor.....	..... ..... .....	..... ..... .....	3775686 2346021 2346129	11.50 14.00 14.00	
28 29 30	No. 166 Globe..... No. 176 Globe..... Light Shield for No. 176 Globe.....	..... ..... .....	..... ..... .....	..... ..... 4830956G1	5.60 5.60 1.85	120

FORMS 45-H AND 45-M NOVALUX SUSPENSION LUMINAIRES

For Use on All Series Circuits
PARTS OF FORMS 45-H AND 45-M LUMINAIRES



FORM 45-H NOVALUX LUMINAIRE FOR CENTER-SPAN MOUNTING

The hanger and outrigger arrangement shown in the illustrations is recommended for use with the Form 45-H1 high-voltage unit. With these outrigger arms the main insulator provides insulation for the crossarm as well as the unit.

The hanger consists of a span-wire clamp of malleable iron with a drop-forged suspension eye. These parts have a galvanized finish. The outrigger consists of two cast arms, which are held in position by the two binding-post screws. The tie-lugs ordinarily used with the insulator are omitted and the loophole at the top of each outrigger arm is used for tying the wire. The outrigger arms are clamped together by two screws which are provided with insulated bushings.

For ordering hanger, see footnote on pages 114 and 115.

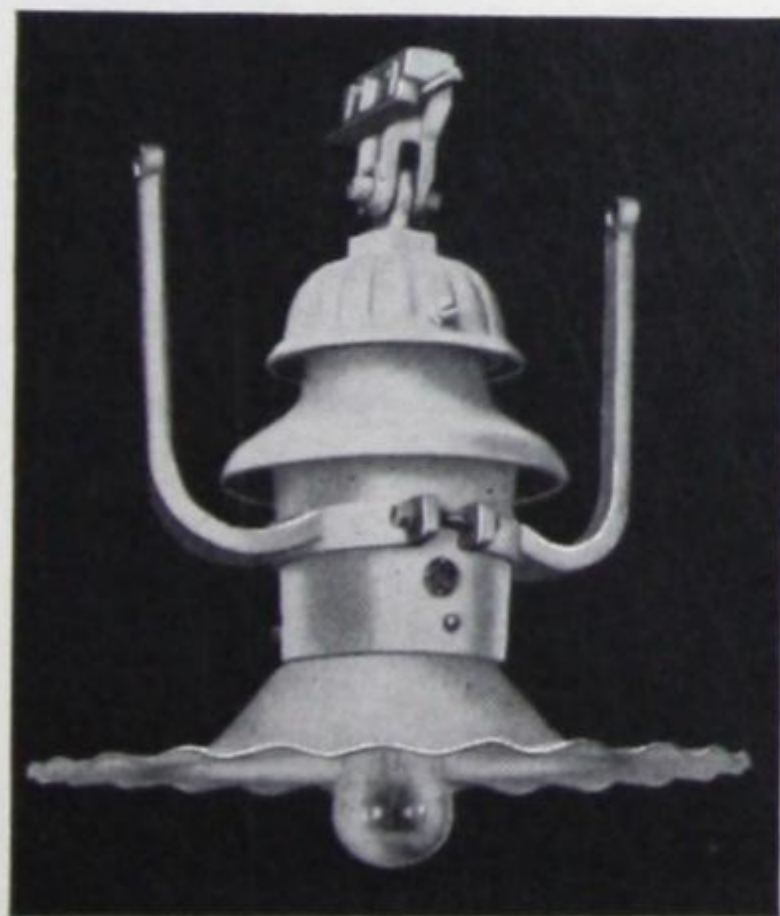


Fig. 31
(Photograph 280789)

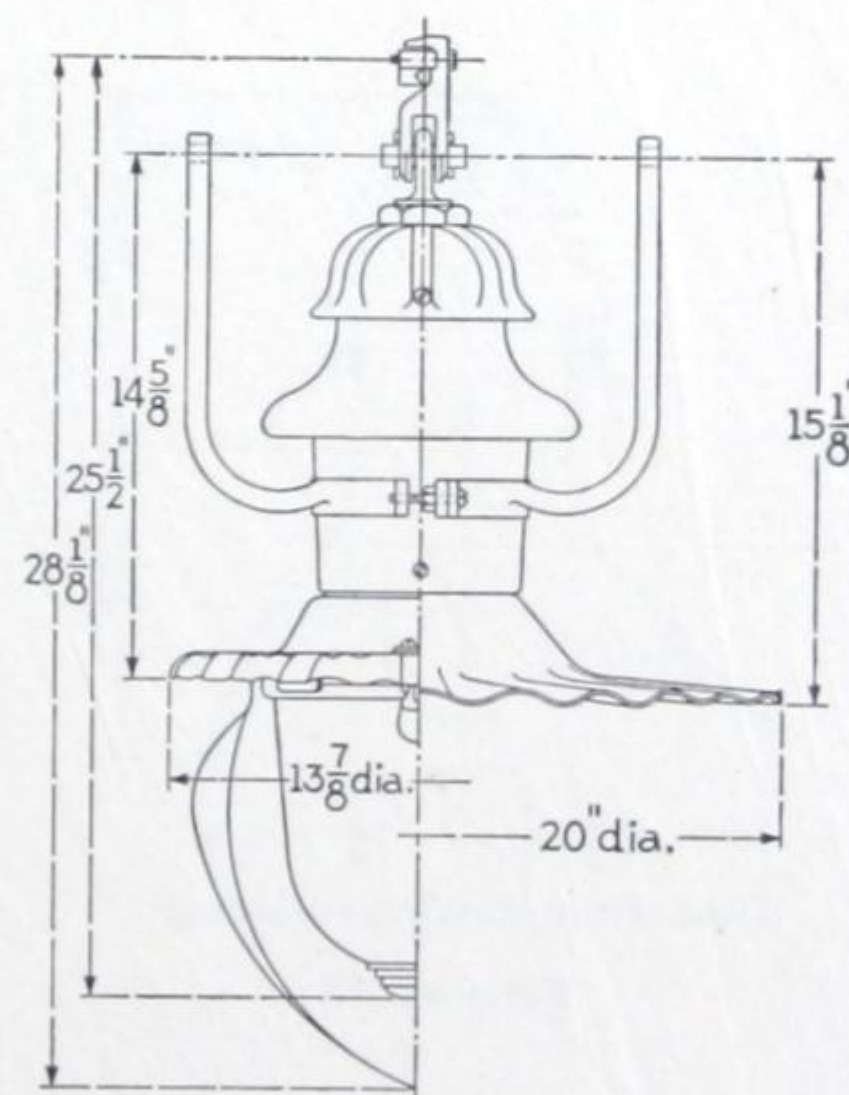
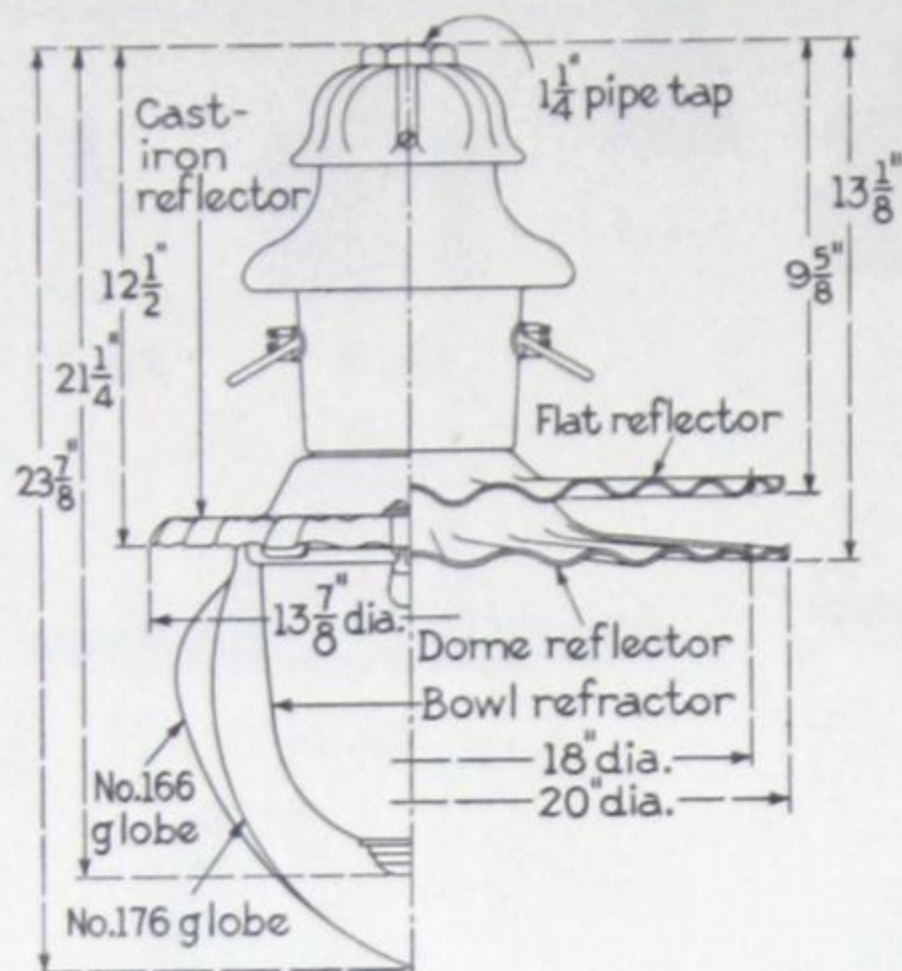


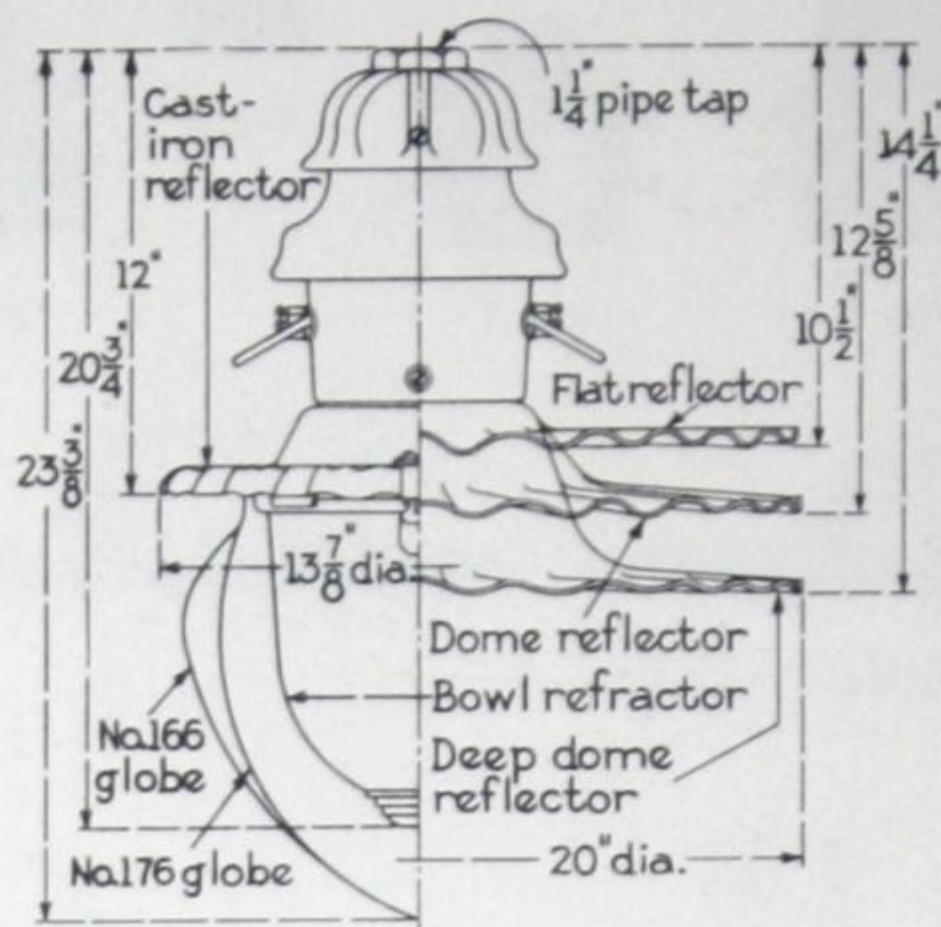
Fig. 32

FORMS 45-H AND 45-M NOVALUX SUSPENSION LUMINAIRES

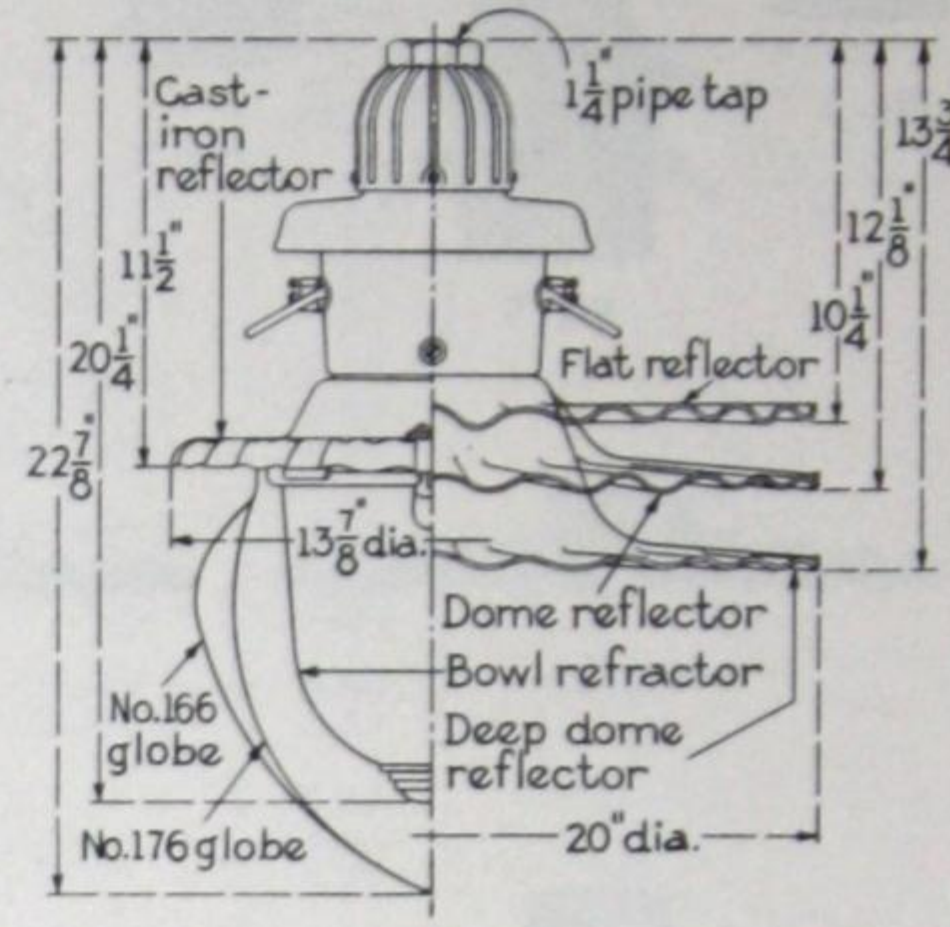
DIMENSIONS



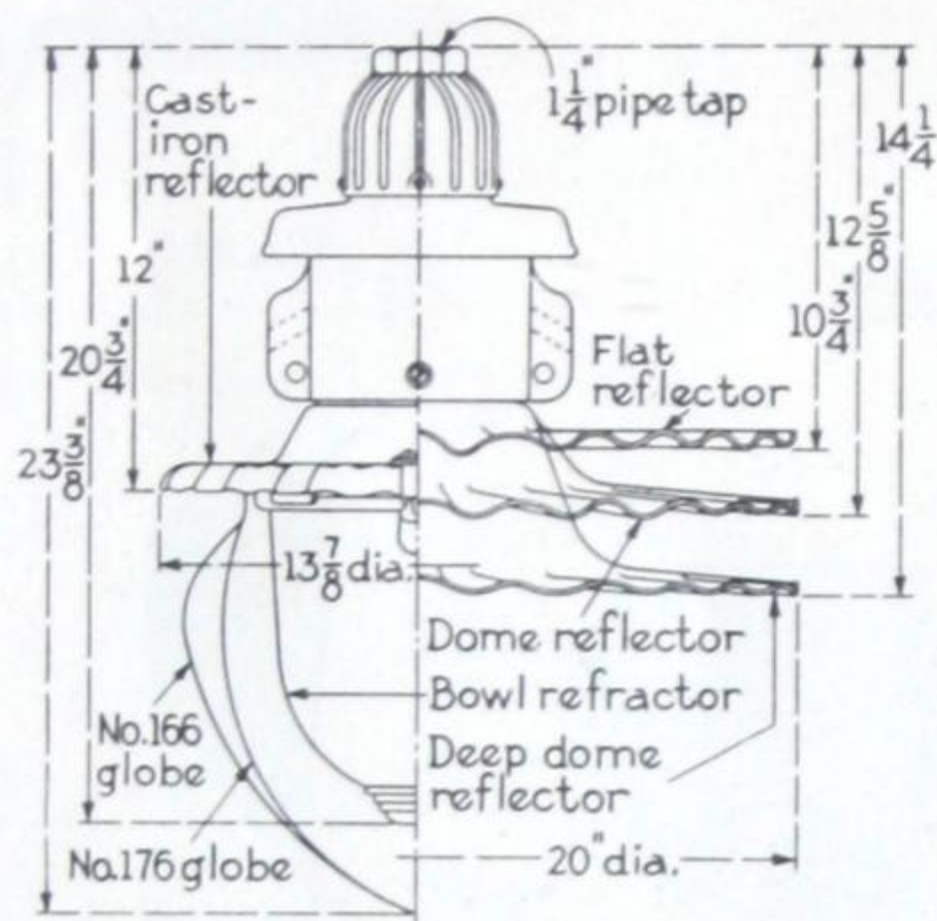
Form 45-H1



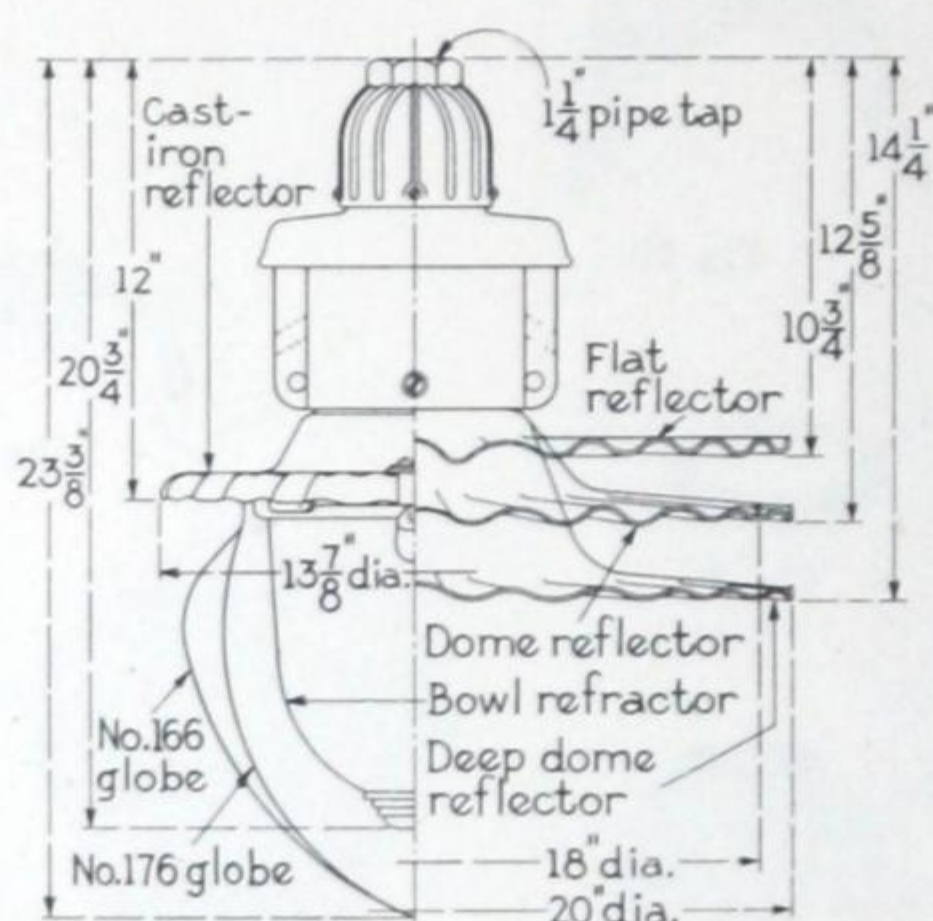
Form 45-H2



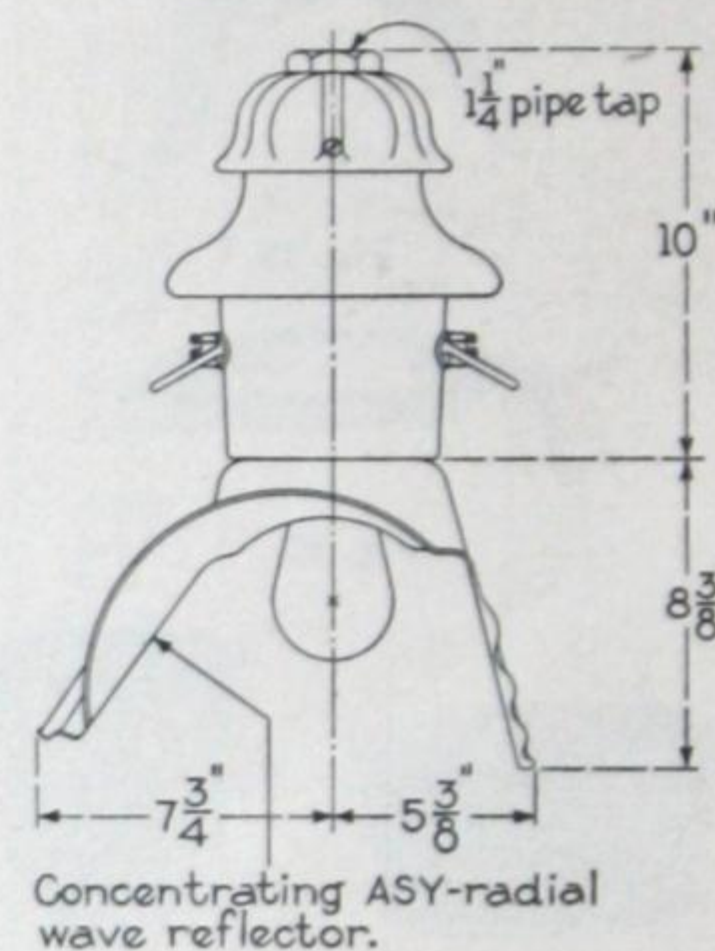
Form 45-H3



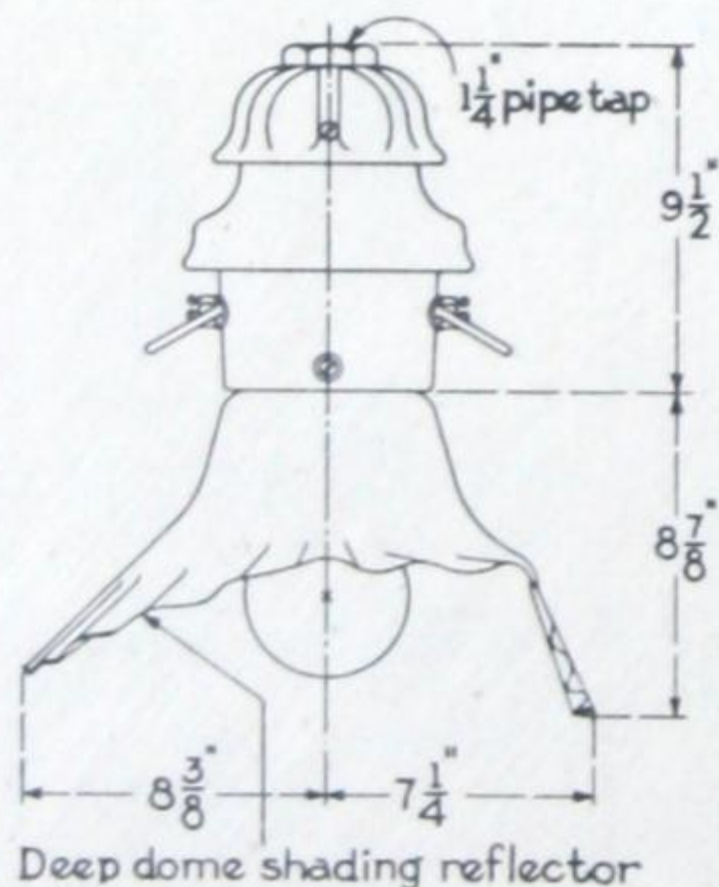
Form 45-H4



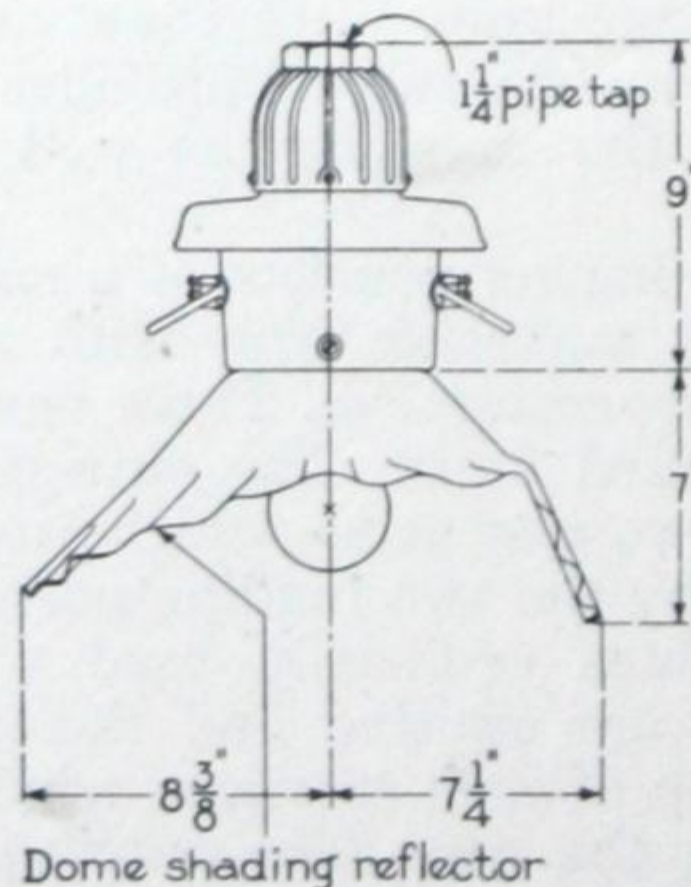
Form 45-M1



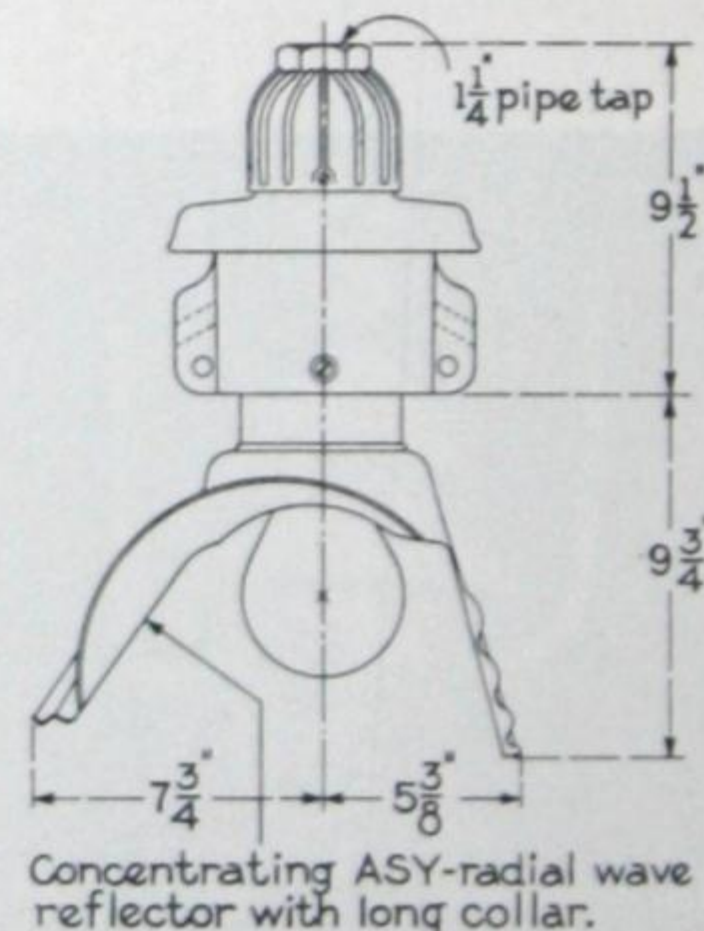
Form 45-H1



Form 45-H2



Form 45-H3



Form 45-H4

FORM 79 HIGH-VOLTAGE G-E NOVALUX SERIES LUMINAIRE



Form 45H4A



Form 72A

The standard series Form 79 luminaire is limited to circuits of 5000 volts and lower. For higher voltages the Form 79 reflector can be adapted to any Novalux suspension insulator. This combination changes the Form number of the insulator luminaire by adding a suffix "A". For instance, the Form 72 with a Form 79 reflector and globe is known as the Form 72-A or with a reflector and B-way refractor is ordered as Form 72-A with B-way refractor.

These luminaires combine all the desirable features of the insulator-type luminaire with the high-light-utilization and concealed-light-source advantages of the Forms 79 and 79-R.

The Form 72-A is the most outstanding luminaire for utilitarian lighting available today. Refer to pages 148 and 154 for details of these luminaires.

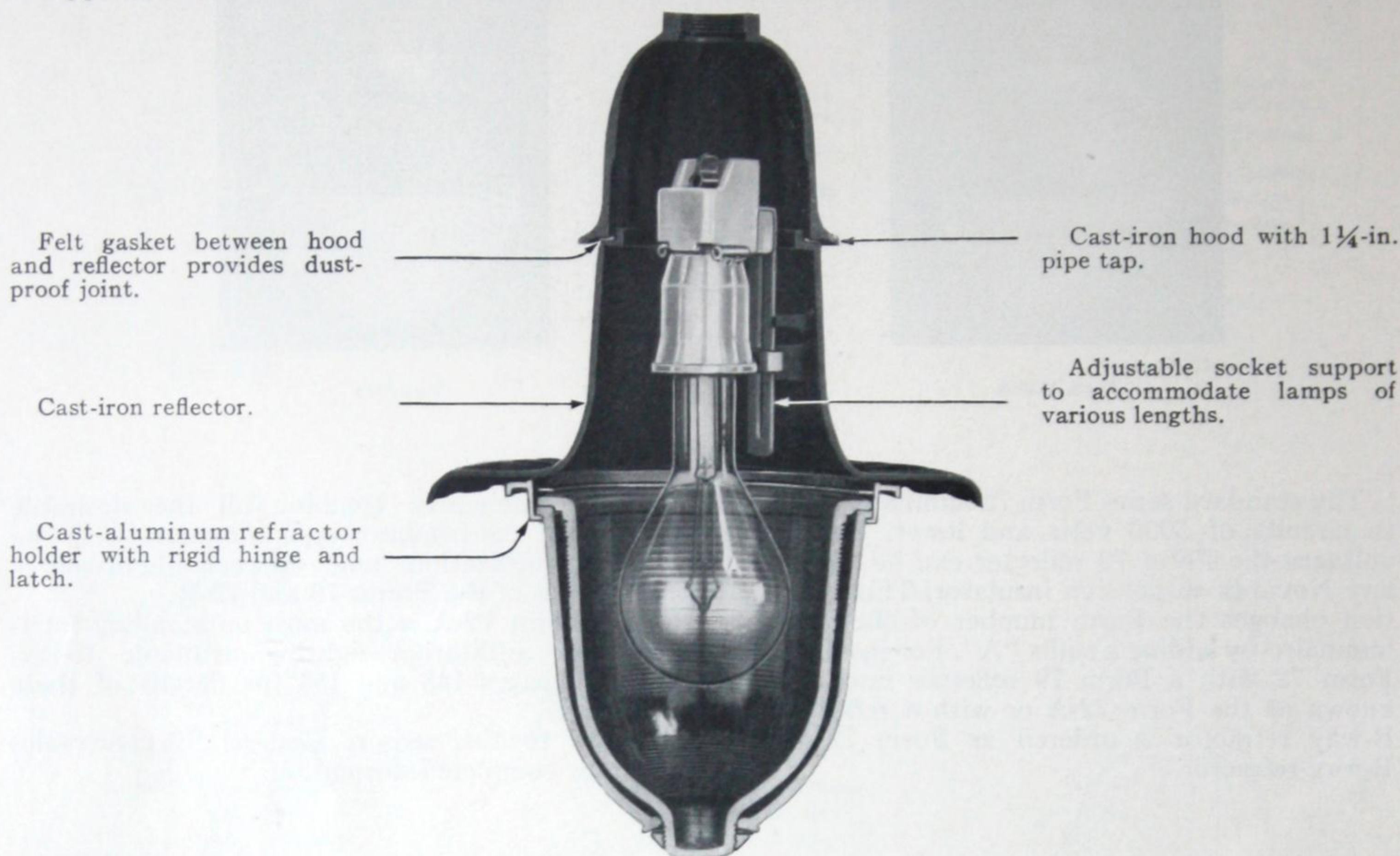
Apply to the nearest General Electric sales office for complete information.

FORM 45-L G-E NOVALUX SUSPENSION LUMINARIES

Form 45-L Novalux suspension luminaires are recommended for installation in residential sections, on main thoroughfares, and on secondary business streets or highways. They are suitable for use on any overhead lighting circuit of less than 5000 volts and are readily adapted for series, multiple, or Type IL transformer distribution.

multiple socket support when the sheet-metal or shallow cast-iron reflectors are used.

The sheet-metal, radial-wave reflectors are made of high-grade enameling steel finished in white and green, fired, vitreous enamel. The contour of these reflectors increases their strength and prevents flexing of the metal and consequent



Sectional view of Form 45-L luminaire

They embody fundamental engineering and mechanical improvements and are characterized by simplified design and interchangeability of parts. Changes in lamps and glassware combinations are readily made, and the requirements of illumination in any district are met with economy of installation and maintenance.

CONSTRUCTION

The Form 45-L Novalux luminaire consists of a cast-iron hood, reflector, series or multiple socket, and refractor or enclosing globe as required.

Four cast-iron hoods are provided, one with a straight 1 1/4-in. pipe tap, one with a right-angle 1 1/4-in. pipe tap, and two similar hoods with bushings for external wiring. These hoods may be finished in either green fire enamel, hot-dip galvanized, or green paint. Three heavy Everdur positioning screws support either the sheet-metal, fire-enamelled, radial-wave reflector or the shallow or deep cast-iron reflector. Two bosses in each hood provide for mounting either the series or

chipping of enamel. Each reflector is provided with a copper collar against which the supporting screws impinge, relieving the enameled surface from undue strain.

The need for a more durable reflector has been recognized, and cast-iron reflectors, both shallow and deep, have, therefore, been developed. They can be furnished with fire enamel, hot-dip galvanized, or painted finish. The fire-enamel finish provides a lustrous finish of high efficiency, long life, and excellent appearance. These reflectors also support the glassware by means of a rigid hinge and latch fitting.

On series circuits up to 5000 volts, a receptacle is furnished for the necessary insulation and to receive the series socket. When used with a hood and sheet-metal or shallow, cast-iron reflector, the receptacle is mounted in the hood on a small non-adjustable support; and when used in the deep cast-iron reflector, an adjustable support provides adjustment for 5 3/8-in., 7-in. or 9 1/2-in. light-center lamps.

FORM 45-L G-E NOVALUX SUSPENSION LUMINAIRES

On multiple circuits, a medium screw-base socket on an adjustable support is mounted in the hood and used with either the sheet-metal or shallow cast-iron reflector, permitting operation of multiple lamps up to and including 200 watts. For the 300- to 500-watt lamps, a mogul screw-base socket is mounted on an adjustable support in the deep cast-iron reflector.

The bowl- and band-refractor holders consist of a cast-aluminum ring, with rigid hinge and latch fittings, which insure spring pressure against the reflector at all times. Felt is cemented to the aluminum ring and provides a long-life gasket, facilitates servicing, and insures a dustproof and insectproof device. The No. 166 and No. 176 globes have a holder similar to the refractor holder and with all the advantages of a refractor holder. It is of sufficient diameter to allow the globe to swing by the dome refractor.

If a dome refractor is required, a holder is provided and may be attached to the cast-iron reflector by the same screws that hold the hinge and latch fitting.

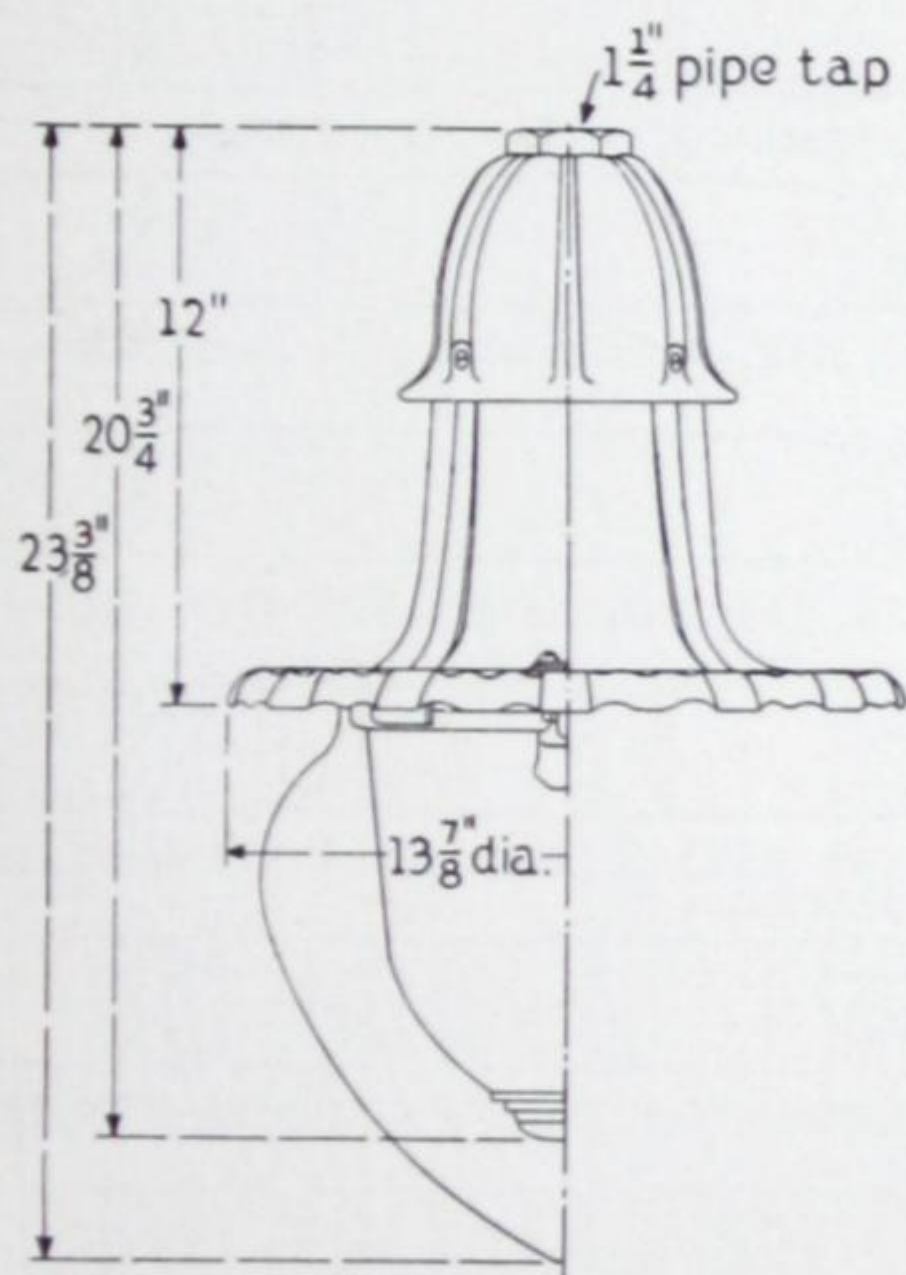
With the new design of rigid-hinge and snap-latch fittings, it is possible to relamp the luminaire

from the ground with a "lamp picker." By pressing on the latch it releases the globe holder or refractor holder allowing the globe to swing open and clear of the lamp. To close, the globe is swung shut and the latch snaps into place holding the globe securely.

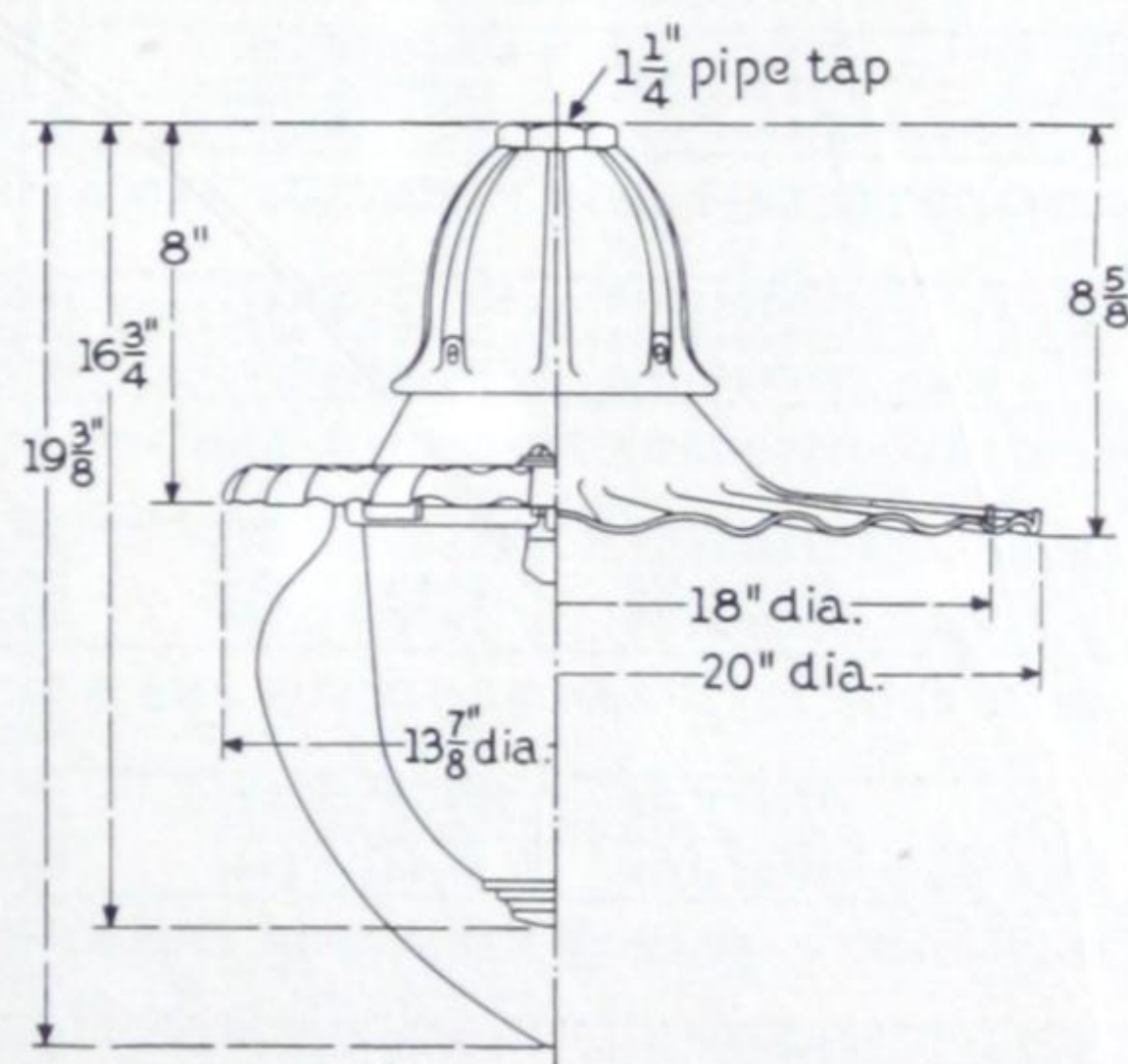
ADVANTAGES

1. Interchangeability and simplicity of parts.
2. Adjustable support for either series or multiple socket.
3. Contour of sheet-metal reflector increases the strength and prevents flexing of the metal and consequent chipping of enamel.
4. Copper collar on sheet-metal reflector relieves enameled surface from undue strain.
5. Durability and interchangeability of cast-iron reflector, lower maintenance and inventory charges.
6. Nonferrous refractor and globe holder provide secure support for glassware with dustproof and insectproof feature.
7. Rigid hinge and snap latch permit relamping from the ground with the aid of a "lamp picker."

DIMENSIONS



Form 45-L luminaire with deep reflector



Form 45-L luminaire with shallow reflector and with radial-wave reflector

FORM 45-L G-E NOVALUX SUSPENSION LUMINAIRES

For Series Circuit Under 5000 Volts



Fig. 1
(Photograph 279762)
Dome radial-wave reflector



Fig. 2
(Photograph 720934)
Deep dome radial-wave reflector



Fig. 3
(Photograph 279749)
Deep cast-iron reflector

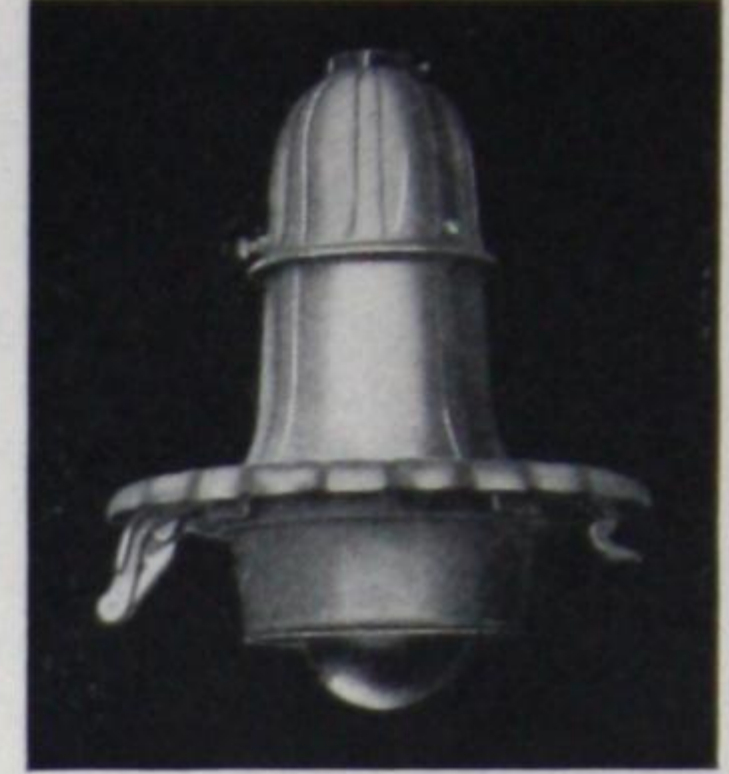


Fig. 4
(Photograph 720931)
Deep cast-iron reflector with band refractor

FIG. NO. COMPLETE LUMINAIRE	FINISH OF HOOD AND REFLECTOR	Internal Wiring			External Wiring			APPROX WT IN LB		FIG. NO. OF PARTS † Refer to Pages 136 and 137 for Illustrations, Description, and Part Price															
		*	*		*	*		Net	Ship.	Δ	Δ	1	3	10	11	12	13	14	15	17	20	25	26		
		CAT. NO.	LIST PRICE Class GO-51	SUPERSEDED CAT. NO.	CAT. NO.	LIST PRICE Class GO-51	SUPERSEDED CAT. NO.																		
18-INCH DOME RADIAL-WAVE REFLECTOR (FIRE ENAMEL FINISH) FOR 1000-LUMEN LAMPS																									
1	Paint	15X46	\$11.80	.....	15X58	\$14.00	.....	10	12	A	A	X		X	X										
1	Galv.	15X47	11.80	.....	15X59	14.00	.....	10	12	B	B	X		X	X										
1	Fire Enam.	15X48	13.60	.....	15X60	15.80	.....	10	12	C	C	X		X	X										
20-INCH DOME RADIAL-WAVE REFLECTOR (FIRE ENAMEL FINISH) FOR 1000-LUMEN LAMPS																									
1	Paint	15X49	\$12.30	.....	15X61	\$14.50	.....	11	13	A	A	X		X		A									
1	Galv.	15X50	12.30	.....	15X62	14.50	.....	11	13	B	B	X		X		A									
1	Fire Enam.	15X51	14.10	.....	15X63	16.30	.....	11	13	C	C	X		X		A									
20-INCH DEEP DOME RADIAL-WAVE REFLECTOR (FIRE ENAMEL FINISH) FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																									
2	Paint	3732041G361	\$12.50	.....	3732041G364	\$14.70	.....	12	14	A	A	X		X		A									
2	Galv.	3732041G362	12.50	.....	3732041G365	14.70	.....	12	14	B	B	X		X		A									
2	Fire Enam.	3732041G363	14.30	.....	3732041G366	16.50	.....	12	14	C	C	X		X		A									
14-INCH DEEP CAST-IRON REFLECTOR FOR 1000-, 2500-, 4000-, OR 6000-LUMEN LAMPS																									
3	Paint	3732041G1	\$18.80	16X291	3732041G46	\$21.00	16X331	19	21	A	A		X	X						D					
3	Galv.	3732041G2	18.80	16X292	3732041G47	21.00	16X332	19	21	B	B		X	X						E					
3	Fire Enam.	3732041G3	24.60	14X560	3732041G48	26.80	14X580	19	21	C	C		X	X						F					
14-INCH DEEP CAST-IRON REFLECTOR AND 8-INCH BAND REFRACTOR, CAT. NO. 1327401, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																									
4	Paint	3732041G10	\$31.40	16X297	3732041G55	\$33.60	16X337	24	29	A	A		X	X						A	A	X			
4	Galv.	3732041G11	31.40	16X298	3732041G56	33.60	16X338	24	29	B	B		X	X						B	A	X			
4	Fire Enam.	3732041G12	37.20	14X563	3732041G57	39.40	14X583	24	29	C	C		X	X						C	A	X			
14-INCH DEEP CAST-IRON REFLECTOR AND SYM-ETRIC BOWL REFRACTOR, CAT. NO. 1340382, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																									
5	Paint	3732041G7	\$33.30	16X295	3732041G52	\$35.50	16X335	27	32	A	A		X	X						A	A		A		
5	Galv.	3732041G8	33.30	16X296	3732041G53	35.50	16X336	27	32	B	B		X	X						B	A		A		
5	Fire Enam.	3732041G9	39.10	14X562	3732041G54	41.30	14X582	27	32	C	C		X	X						C	A		A		
14-INCH DEEP CAST-IRON REFLECTOR AND B-SYM-ETRIC RIPPLED BOWL REFRACTOR, CAT. NO. 2346181, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																									
5	Paint	3732041G4	\$39.10	16X293	3732041G49	\$41.30	16X333	29	36	A	A		X	X						A	A		B		
5	Galv.	3732041G5	39.10	16X294	3732041G50	41.30	16X334	29	36	B	B		X	X						B	A		B		
5	Fire Enam.	3732041G6	44.90	14X561	3732041G51	47.10	14X581	29	36	C	C		X	X						C	A		B		
14-INCH DEEP CAST-IRON REFLECTOR AND HI-WAY RIPPLED BOWL REFRACTOR, CAT. NO. 3775699, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																									
5	Paint	3732041G19	\$39.10	1229474G364	3732041G64	\$41.30	1229474G367	29	36	A	A		X	X						A	A		C		
5	Galv.	3732041G20	39.10	1229474G365	3732041G65	41.30	1229474G368	29	36	B	B		X	X						B	A		C		
5	Fire Enam.	3732041G21	44.90	1229474G366	3732041G66	47.10	1229474G369	29	36	C	C		X	X						C	A		C		

* Catalog numbers and prices do not include MAZDA lamps.

† Fixtures composed of parts indicated by "X" or letter "A, B, C, D, E, or F." Letter refers to the description under the Fig. No. on pages 136 and 137.

Δ Use part 1 for internal wiring and part 3 for external wiring; both not required.

For use with straight-pipe bracket, order similar to above except with right-angle hood, Fig. 4 or Fig. 6, pages 136 and 137 for internal and external wiring respectively. Add to list price the difference between the part prices of the straight- and right-angle hoods.

Luminaire with No. 176 globe may be equipped with light shield, Cat. No. 4830956G1. Add \$1.85 to list price.

FORM 45-L G-E NOVALUX SUSPENSION LUMINAIRES

For Series Circuit Under 5000 Volts

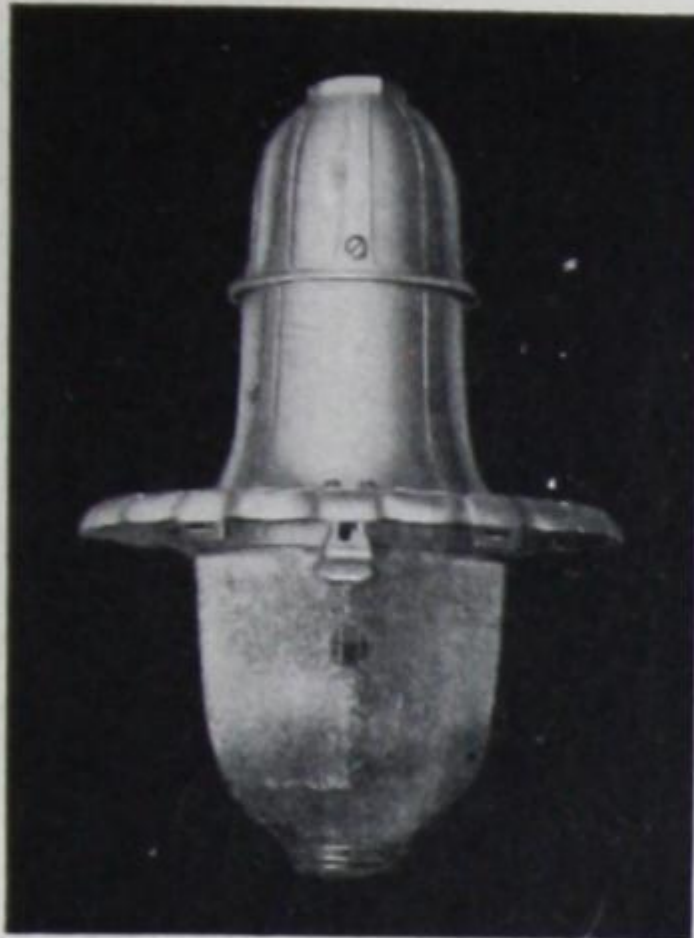


Fig. 5
(Photograph 720416)
Deep cast-iron reflector
with bowl refractor



Fig. 6
(Photograph 720417)
Deep cast-iron reflector
with No. 166 globe

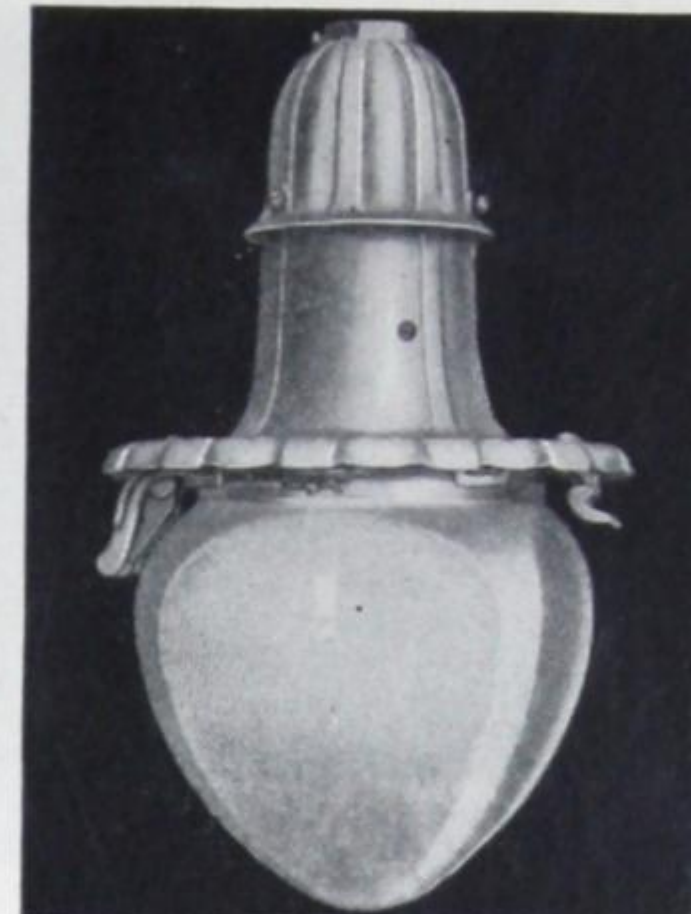


Fig. 7
(Photograph 720929)
Deep cast-iron reflector
with No. 176 globe

FIG. NO. COM- PLETE LUMI- NAIRE	FINISH OF HOOD AND REFLECTOR	Internal Wiring			External Wiring			[APPROX WT IN LB		FIG. NO. OF PARTS † Refer to Pages 136 and 137 for Illustrations, Description, and Part Price												
		*	*	SUPERSEDED CAT. NO.	*	*	SUPERSEDED CAT. NO.	Net	Ship.	Δ	1	3	11	12	17	18	19	21	22	24		
		CAT. NO.	LIST PRICE Class GO-51		CAT. NO.	LIST PRICE Class GO-51															CAT. NO.	
14-INCH DEEP CAST-IRON REFLECTOR AND NO. 166 MEDIUM ALABASTER RIPPLED GLOBE FOR 2500-, 4000-, 6000-, OR 10,000-LUMEN LAMPS																						
6	Paint	3732041G22	\$27.40	16X303	3732041G67	\$29.60	16X343	24	28	A	A	X	X	A	X							
6	Galv.	3732041G23	27.40	16X304	3732041G68	29.60	16X344	24	28	B	B	X	X	B	X							X
6	Fire Enam.	3732041G24	33.20	14X566	3732041G69	35.40	14X586	24	28	C	C	X	X	C	X							X
14-INCH DEEP CAST-IRON REFLECTOR, NO. 166 LIGHT ALABASTER RIPPLED GLOBE, AND SYM-ETRIC DOME REFRACTOR, CAT. NO. 1340228, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																						
6	Paint	3732041G367	\$39.40	16X305	3732041G370	\$41.60	16X345	28	36	A	A	X	X	A	X	X	X					A
6	Galv.	3732041G368	39.40	16X306	3732041G371	41.60	16X346	28	36	B	B	X	X	B	X	X	X					A
6	Fire Enam.	3732041G369	45.20	14X567	3732041G372	47.40	14X587	28	36	C	C	X	X	C	X	X	X					A
14-INCH DEEP CAST-IRON REFLECTOR, NO. 166 LIGHT ALABASTER RIPPLED GLOBE, AND SYM-ETRIC DOME REFRACTOR, CAT. NO. 3775686, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																						
6	Paint	3732041G25	\$39.40	.....	3732041G70	\$41.60	.....	28	36	A	A	X	X	A	X	X	X					B
6	Galv.	3732041G26	39.40	.....	3732041G71	41.60	.....	28	36	B	B	X	X	B	X	X	X					B
6	Fire Enam.	3732041G27	45.20	.....	3732041G72	47.40	.....	28	36	C	C	X	X	C	X	X	X					B
14-INCH DEEP CAST-IRON REFLECTOR, NO. 166 LIGHT ALABASTER RIPPLED GLOBE, AND A-SYM-ETRIC DOME REFRACTOR, CAT. NO. 2346021, FOR 2500-, 4000-, 6000-, OR 10,000-LUMEN LAMPS																						
6	Paint	3732041G28	\$41.90	16X307	3732041G73	\$44.10	16X347	28	36	A	A	X	X	A	X	X	X					C
6	Galv.	3732041G29	41.90	16X308	3732041G74	44.10	16X348	28	36	B	B	X	X	B	X	X	X					C
6	Fire Enam.	3732041G30	47.70	14X568	3732041G75	49.90	14X588	28	36	C	C	X	X	C	X	X	X					C
14-INCH DEEP CAST-IRON REFLECTOR, NO. 166 LIGHT ALABASTER RIPPLED GLOBE, AND B-SYM-ETRIC DOME REFRACTOR, CAT. NO. 2346129, FOR 2500-, 4000-, 6000-, OR 10,000-LUMEN LAMPS																						
6	Paint	3732041G31	\$41.90	16X309	3732041G76	\$44.10	16X349	28	36	A	A	X	X	A	X	X	X					D
6	Galv.	3732041G32	41.90	16X310	3732041G77	44.10	16X350	28	36	B	B	X	X	B	X	X	X					D
6	Fire Enam.	3732041G33	47.70	14X569	3732041G78	49.90	14X589	28	36	C	C	X	X	C	X	X	X					D
14-INCH DEEP CAST-IRON REFLECTOR AND NO. 176 MEDIUM ALABASTER RIPPLED GLOBE FOR 2500-, 4000-, 6000-, OR 10,000-LUMEN LAMPS																						
7	Paint	3732041G34	\$27.40	.....	3732041G79	\$29.60	.....	24	28	A	A	X	X	A	X							X
7	Galv.	3732041G35	27.40	.....	3732041G80	29.60	.....	24	28	B	B	X	X	B	X							X
7	Fire Enam.	3732041G36	33.20	.....	3732041G81	35.40	.....	24	28	C	C	X	X	C	X							X
14-INCH DEEP CAST-IRON REFLECTOR, NO. 176 LIGHT ALABASTER RIPPLED GLOBE, AND SYM-ETRIC DOME REFRACTOR, CAT. NO. 1340228, FOR 2500-, 4000-, OR 6000-LUMEN LAMPS																						
7	Paint	3732041G373	\$39.40	.....	3732041G376	\$41.60	.....	28	36	A	A	X	X	A	X	X						A
7	Galv.	3732041G374	39.40	.....	3732041G377	41.60	.....	28	36	B	B	X	X	B	X	X						A
7	Fire Enam.	3732041G375	45.20	.....	3732041G378	47.40	.....	28	36	C	C	X	X	C	X	X						A
14-INCH DEEP CAST-IRON REFLECTOR, NO. 176 LIGHT ALABASTER RIPPLED GLOBE, AND SYM-ETRIC DOME REFRACTOR, CAT. NO. 3775686, FOR 2500-, 4000-, 6000-, OR 10,000-LUMEN LAMPS																						
7	Paint	3732041G37	\$39.40	.....	3732041G82	\$41.60	.....	28	36	A	A	X	X	A	X	X						B
7	Galv.	3732041G38	39.40	.....	3732041G83	41.60	.....	28	36	B	B	X	X	B	X	X						B
7	Fire Enam.	3732041G39	45.20	.....	3732041G84	47.40	.....	28	36	C	C	X	X	C	X	X						B
14-INCH DEEP CAST-IRON REFLECTOR, NO. 176 LIGHT ALABASTER RIPPLED GLOBE AND A-SYM-ETRIC DOME REFRACTOR, CAT. NO. 2346021, FOR 2500-, 4000-, 6000-, OR 10,000-LUMEN LAMPS																						
7	Paint	3732041G40	\$41.90	.....	3732041G85	\$44.10	.....	28	36	A	A	X	X	A	X	X						C
7	Galv.	3732041G41	41.90	.....	3732041G86	44.10	.....	28	36	B	B	X	X	B	X	X						C
7	Fire Enam.	3732041G42	47.70	.....	3732041G87	49.90	.....	28	36	C	C	X	X	C	X	X						C
14-INCH DEEP CAST-IRON REFLECTOR, NO. 176 LIGHT ALABASTER RIPPLED GLOBE AND B-SYM-ETRIC DOME REFRACTOR, CAT. NO. 2346129, FOR 2500-, 4000-, 6000-, OR 10,000-LUMEN LAMPS																						
7	Paint	3732041G43	\$41.90	.....	3732041G88	\$44.10	.....	28	36	A	A	X	X	A	X	X						D
7	Galv.	3732041G44	41.90	.....	3732041G89	44.10	.....	28	36	B	B	X	X	B	X	X						D
7	Fire Enam.	3732041G45	47.70	.....	3732041G90	49.90	.....	28	36	C	C	X	X	C	X	X						D

FORM 45-L G-E NOVALUX SUSPENSION LUMINAIRES

For 100-, 150-, or 200-watt Straight Multiple Lamps



Fig. 1
(Photograph 279762)
Dome radial-wave reflector



Fig. 2
(Photograph 280374)
Cast-iron reflector

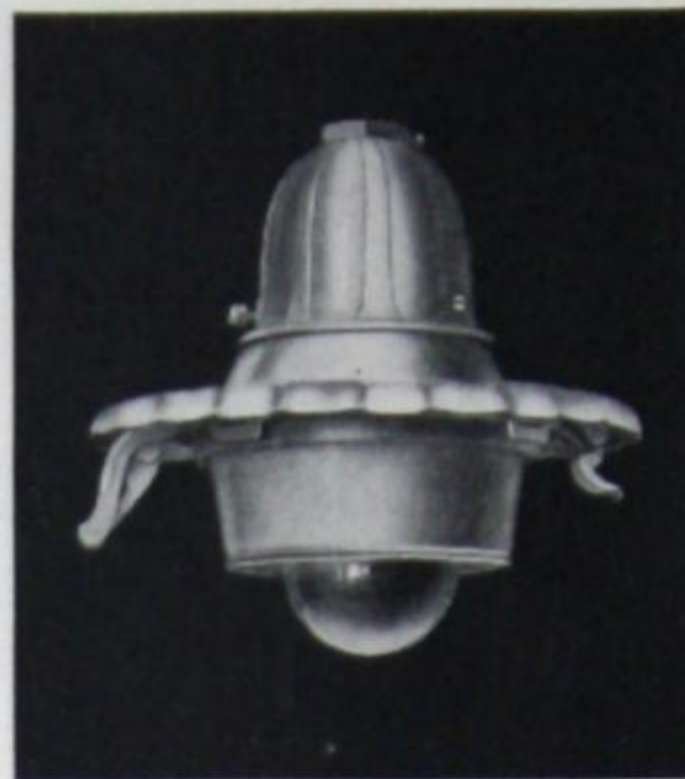


Fig. 3
(Photograph 720932)
Cast-iron reflector
with band refractor



Fig. 4
(Photograph 720411)
Cast-iron reflector
with bowl refractor

FIG. NO. COM- PLETE LUMI- NAIRE	FINISH OF HOOD AND REFLECTOR	Internal Wiring			External Wiring			APPROX WT IN LB		FIG. NO. OF PARTS †Refer to Pages 136 and 137 for Illustrations, Description, and Part Price									
		* CAT. NO.	* LIST PRICE Class GO-51	SUPERSEDED CAT. NO.	* CAT. NO.	* LIST PRICE Class GO-51	SUPERSEDED CAT. NO.			Net	Ship	1	2	7	13	14	16	20	25	26
18-INCH DOME RADIAL-WAVE REFLECTOR (FIRE ENAMEL FINISH)																			
1	Paint	15X64	\$9.90	.....	15X100	\$11.30	.....	9	11	A	A	X	X						
1	Galv.	15X65	9.90	.....	15X101	11.30	.....	9	11	B	B	X	X						
1	Fire Enam.	15X66	11.70	.....	15X102	13.10	.....	9	11	C	C	X	X						
20-INCH DOME RADIAL-WAVE REFLECTOR (FIRE ENAMEL FINISH)																			
1	Paint	15X67	\$10.40	.....	15X103	\$11.80	.....	10	12	A	A	X		A					
1	Galv.	15X68	10.40	.....	15X104	11.80	.....	10	12	B	B	X		A					
1	Fire Enam.	15X69	12.20	.....	15X105	13.60	.....	10	12	C	C	X		A					
14-INCH CAST-IRON REFLECTOR																			
2	Paint	3732041G91	\$12.70	15X70	3732041G136	\$14.10	15X106	14	16	A	A	X				D			
2	Galv.	3732041G92	12.70	15X71	3732041G137	14.10	15X107	14	16	B	B	X				E			
2	Fire Enam.	3732041G93	18.10	15X72	3732041G138	19.50	15X108	14	16	C	C	X				F			
14-INCH CAST-IRON REFLECTOR AND 8-INCH BAND REFRACTOR, CAT. NO. 1327401																			
3	Paint	3732041G100	\$25.30	15X79	3732041G145	\$26.70	15X115	19	24	A	A	X				A	A	X	
3	Galv.	3732041G101	25.30	15X80	3732041G146	26.70	15X116	19	24	B	B	X				B	A	X	
3	Fire Enam.	3732041G102	30.70	15X81	3732041G147	32.10	15X117	19	24	C	C	X				C	A	X	
14-INCH CAST-IRON REFLECTOR AND SYM-ETRIC BOWL REFRACTOR, CAT. NO. 1340382																			
4	Paint	3732041G97	\$27.20	15X76	3732041G142	\$28.60	15X112	22	27	A	A	X				A	A		A
4	Galv.	3732041G98	27.20	15X77	3732041G143	28.60	15X113	22	27	B	B	X				B	A		A
4	Fire Enam.	3732041G99	32.60	15X78	3732041G144	34.00	15X114	22	27	C	C	X				C	A		A
14-INCH CAST-IRON REFLECTOR AND B-SYM-ETRIC RIPPLED BOWL REFRACTOR, CAT. NO. 2346181																			
4	Paint	3732041G94	\$33.00	15X73	3732041G139	\$34.40	15X109	24	31	A	A	X				A	A		B
4	Galv.	3732041G95	33.00	15X74	3732041G140	34.40	15X110	24	31	B	B	X				B	A		B
4	Fire Enam.	3732041G96	38.40	15X75	3732041G141	39.80	15X111	24	31	C	C	X				C	A		B
14-INCH CAST-IRON REFLECTOR AND HI-WAY RIPPLED BOWL REFRACTOR, CAT. NO. 3775699																			
4	Paint	3732041G109	\$33.00	1229474G370	3732041G154	\$34.40	1229474G373	24	31	A	A	X				A	A		C
4	Galv.	3732041G110	33.00	1229474G371	3732041G155	34.40	1229474G374	24	31	B	B	X				B	A		C
4	Fire Enam.	3732041G111	38.40	1229474G372	3732041G156	39.80	1229474G375	24	31	C	C	X				C	A		C

* Catalog numbers and prices do not include MAZDA lamps.

† Fixtures composed of parts indicated by "X" or letter "A, B, C, D, E, or F." Letter refers to the description under the Fig. No. on pages 136 and 137.

△ Use part 1 for internal wiring and part 2 for external wiring; both not required.

For use with straight-pipe bracket, order similar to above except with right-angle hood. Fig. 4 or Fig. 6 pages 136 and 137 for internal and external wiring respectively. Add to list price the difference between the part prices of the straight- and right-angle hoods.

Luminaire with No. 176 globe may be equipped with light shield, Cat. No. 4830956G1. Add \$1.85 to list price.

FORM 45-L G-E NOVALUX SUSPENSION LUMINAIRES

For 100-, 150-, or 200-watt Straight Multiple Lamps



Fig. 5
(Photograph 720412)
Cast-iron reflector
with No. 166 globe



Fig. 6
(Photograph 720930)
Cast-iron reflector
with No. 176 globe

FIG. NO. COM- PLETE LUMI- NAIRE	FINISH OF HOOD AND REFLECTOR	Internal Wiring			External Wiring			APPROX WT IN LB		FIG. NO. OF PARTS †Refer to Pages 136 and 137 for Illustrations, Description, and Part Price											
		* CAT. NO.	* LIST PRICE Class GO-51	SUPERSEDED CAT. NO.	* CAT. NO.	* LIST PRICE Class GO-51	SUPERSEDED CAT. NO.			Net	Ship	△ 1	△ 2	7	16	18	19	21	22	24	
		14-INCH CAST-IRON REFLECTOR AND NO. 166 MEDIUM ALABASTER RIPPLED GLOBE																			
5	Paint	3732041G112	\$21.30	15X88	3732041G157	\$22.70	15X124	19	23	A	A	X	A	X	X	X					
5	Galv.	3732041G113	21.30	15X89	3732041G158	22.70	15X125	19	23	B	B	X	B	X	X	X					
5	Fire Enam.	3732041G114	26.70	15X90	3732041G159	28.10	15X126	19	23	C	C	X	C	X	X	X					
14-INCH CAST-IRON REFLECTOR, NO. 166 LIGHT ALABASTER RIPPLED GLOBE, AND SYM-ETRIC DOME REFRACTOR, CAT. NO. 1340228																					
5	Paint	3732041G379	\$33.30	15X91	3732041G382	\$34.70	15X127	23	29	A	A	X	A	X	X	X				A	
5	Galv.	3732041G380	33.30	15X92	3732041G383	34.70	15X128	23	29	B	B	X	B	X	X	X				A	
5	Fire Enam.	3732041G381	38.70	15X93	3732041G384	40.10	15X129	23	29	C	C	X	C	X	X	X				A	
14-INCH CAST-IRON REFLECTOR, NO. 166 LIGHT ALABASTER RIPPLED GLOBE, AND SYM-ETRIC DOME REFRACTOR, CAT. NO. 3775686																					
5	Paint	3732041G115	\$33.30	.....	3732041G160	\$34.70	.....	23	29	A	A	X	A	X	X	X				B	
5	Galv.	3732041G116	33.30	.....	3732041G161	34.70	.....	23	29	B	B	X	B	X	X	X				B	
5	Fire Enam.	3732041G117	38.70	.....	3732041G162	40.10	.....	23	29	C	C	X	C	X	X	X				B	
14-INCH CAST-IRON REFLECTOR, NO. 166 LIGHT ALABASTER RIPPLED GLOBE, AND A-SYM-ETRIC DOME REFRACTOR, CAT. NO. 2346021																					
5	Paint	3732041G118	\$35.80	15X94	3732041G163	\$37.20	15X130	23	29	A	A	X	A	X	X	X				C	
5	Galv.	3732041G119	35.80	15X95	3732041G164	37.20	15X131	23	29	B	B	X	B	X	X	X				C	
5	Fire Enam.	3732041G120	41.20	15X96	3732041G165	42.60	15X132	23	29	C	C	X	C	X	X	X				C	
14-INCH CAST-IRON REFLECTOR, NO. 166 LIGHT ALABASTER RIPPLED GLOBE, AND B-SYM-ETRIC DOME REFRACTOR, CAT. NO. 2346129																					
5	Paint	3732041G121	\$35.80	15X97	3732041G166	\$37.20	15X133	23	29	A	A	X	A	X	X	X				D	
5	Galv.	3732041G122	35.80	15X98	3732041G167	37.20	15X134	23	29	B	B	X	B	X	X	X				D	
5	Fire Enam.	3732041G123	41.20	15X99	3732041G168	42.60	15X135	23	29	C	C	X	C	X	X	X				D	
14-INCH CAST-IRON REFLECTOR AND NO. 176 MEDIUM ALABASTER RIPPLED GLOBE																					
6	Paint	3732041G124	\$21.30	.....	3732041G169	\$22.70	.....	19	23	A	A	X	A	X							
6	Galv.	3732041G125	21.30	.....	3732041G170	22.70	.....	19	23	B	B	X	B	X							
6	Fire Enam.	3732041G126	26.70	.....	3732041G171	28.10	.....	19	23	C	C	X	C	X							
14-INCH CAST-IRON REFLECTOR, NO. 176 LIGHT ALABASTER RIPPLED GLOBE, AND SYM-ETRIC DOME REFRACTOR, CAT. NO. 1340228																					
6	Paint	3732041G385	\$33.30	.....	3732041G388	\$34.70	.....	23	29	A	A	X	A	X	X					A	
6	Galv.	3732041G386	33.30	.....	3732041G389	34.70	.....	23	29	B	B	X	B	X	X					A	
6	Fire Enam.	3732041G387	38.70	.....	3732041G390	40.10	.....	23	29	C	C	X	C	X	X					A	
14-INCH CAST-IRON REFLECTOR, NO. 176 LIGHT ALABASTER RIPPLED GLOBE, AND SYM-ETRIC DOME REFRACTOR, CAT. NO. 3775686																					
6	Paint	3732041G127	\$33.30	.....	3732041G172	\$34.70	.....	23	29	A	A	X	A	X	X					B	
6	Galv.	3732041G128	33.30	.....	3732041G173	34.70	.....	23	29	B	B	X	B	X	X					B	
6	Fire Enam.	3732041G129	38.70	.....	3732041G174	40.10	.....	23	29	C	C	X	C	X	X					B	
14-INCH CAST-IRON REFLECTOR, NO. 176 LIGHT ALABASTER RIPPLED GLOBE, AND A-SYM-ETRIC DOME REFRACTOR, CAT. NO. 2346021																					
6	Paint	3732041G130	\$35.80	.....	3732041G175	\$37.20	.....	23	29	A	A	X	A	X	X					C	
6	Galv.	3732041G131	35.80	.....	3732041G176	37.20	.....	23	29	B	B	X	B	X	X					C	
6	Fire Enam.	3732041G132	41.20	.....	3732041G177	42.60	.....	23	29	C	C	X	C	X	X					C	
14-INCH CAST-IRON REFLECTOR, NO. 176 LIGHT ALABASTER RIPPLED GLOBE, AND B-SYM-ETRIC DOME REFRACTOR, CAT. NO. 2346129																					
6	Paint	3732041G133	\$35.80	.....	3732041G178	\$37.20	.....	23	29	A	A	X	A	X	X					D	
6	Galv.	3732041G134	35.80	.....	3732041G179	37.20	.....	23	29	B	B	X	B	X	X					D	
6	Fire Enam.	3732041G135	41.20	.....	3732041G180	42.60	.....	23	29	C	C	X	C	X	X					D	

* Catalog numbers and prices do not include MAZDA lamps.

† Fixtures composed of parts indicated by "X" or letter "A, B, C, or D." Letter refers to the description under the Fig. No. on pages 136 and 137.

Δ Use part 1 for internal wiring and part 2 for external wiring; both not required.

For use with straight-pipe bracket, order similar to above except with right-angle hood. Fig. 4 or Fig. 6 pages 136 and 137 for internal and external wiring respectively. Add to list price the difference between the part prices of the straight- and right-angle hoods.

Luminaire with No. 176 globe may be equipped with light shield, Cat. No. 4830956G1. Add \$1.85 to list price.

FORM 45-L G-E NOVALUX SUSPENSION LUMINAIRES

For 300-watt Straight Multiple Lamps and for Type IL Transformer Circuits Using 2500-, 4000-, or 6000-lumen Lamps

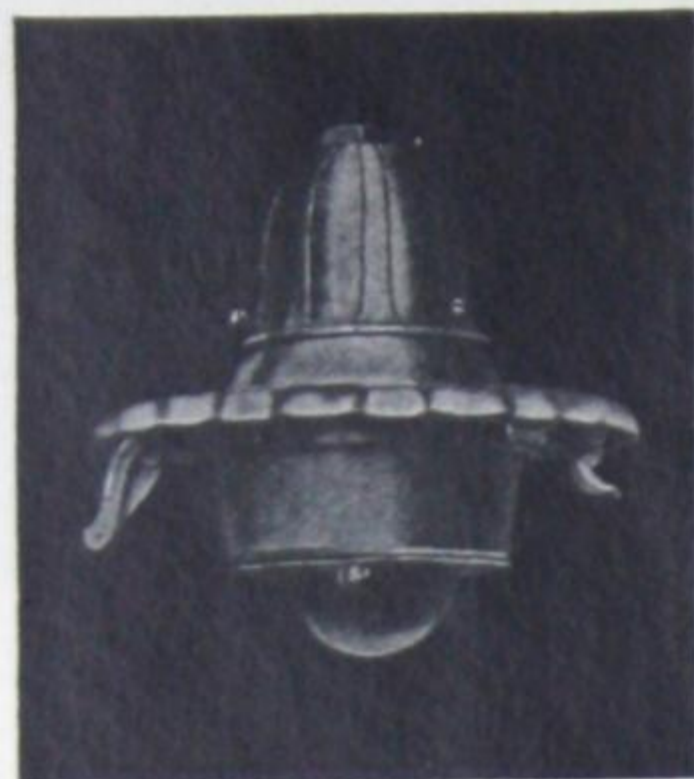


Fig. 1
(Photograph 720932)
Cast-iron reflector
with band refractor



Fig. 2
(Photograph 720411)
Cast-iron reflector
with bowl refractor



Fig. 3
(Photograph 720412)
Cast-iron Reflector
with No. 166 globe

FIG. NO. COMPLETE LUMINAIRE	FINISH OF HOOD AND REFLECTOR	Internal Wiring			External Wiring			APPROX WT IN LB		FIG. NO. OF PARTS † Refer to Pages 136 and 137 for Illustration, Description, and Part Price											
		* CAT. NO.	* LIST PRICE Class GO-51	SUPERSEDED CAT. NO.	* CAT. NO.	* LIST PRICE Class GO-51	SUPERSEDED CAT. NO.	Net	Ship.	△	△	8	16	18	19	20	21	24	25	26	
										1	2										
14-INCH CAST-IRON REFLECTOR AND 8-INCH BAND REFRACTOR, CAT. NO. 1327401																					
1	Paint	3732041G190	\$25.50	29X192	3732041G235	\$26.90	29X219	19	24	A	A	X	A			A				X	
1	Galv.	3732041G191	25.50	29X193	3732041G236	26.90	29X220	19	24	B	B	X	B			A				X	
1	Fire Enam.	3732041G192	30.90	29X194	3732041G237	32.30	29X221	19	24	C	C	X	C			A				X	
14-INCH CAST-IRON REFLECTOR AND SYM-ETRIC BOWL REFRACTOR, CAT. NO. 1340382																					
2	Paint	3732041G187	\$27.40	29X189	3732041G232	\$28.80	29X216	22	27	A	A	X	A			A				A	
2	Galv.	3732041G188	27.40	29X190	3732041G233	28.80	29X217	22	27	B	B	X	B			A				A	
2	Fire Enam.	3732041G189	32.80	29X191	3732041G234	34.20	29X218	22	27	C	C	X	C			A				A	
14-INCH CAST-IRON REFLECTOR AND B-SYM-ETRIC RIPPLED BOWL REFRACTOR, CAT. NO. 2346181																					
2	Paint	3732041G184	\$33.20	29X186	3732041G229	\$34.60	29X213	24	31	A	A	X	A			A				B	
2	Galv.	3732041G185	33.20	29X187	3732041G230	34.60	29X214	24	31	B	B	X	B			A				B	
2	Fire Enam.	3732041G186	38.60	29X188	3732041G231	40.00	29X215	24	31	C	C	X	C			A				B	
14-INCH CAST-IRON REFLECTOR AND HI-WAY RIPPLED BOWL REFRACTOR, CAT. NO. 3775699																					
2	Paint	3732041G199	\$33.20	1229474G376	3732041G244	\$34.60	1229474G379	24	31	A	A	X	A			A				C	
2	Galv.	3732041G200	33.20	1229474G377	3732041G245	34.60	1229474G380	24	31	B	B	X	B			A				C	
2	Fire Enam.	3732041G201	38.60	1229474G378	3732041G246	40.00	1229474G381	24	31	C	C	X	C			A				C	
14-INCH CAST-IRON REFLECTOR AND NO. 166 MEDIUM ALABASTER RIPPLED GLOBE																					
3	Paint	3732041G202	\$21.50	29X201	3732041G247	\$22.90	29X228	19	23	A	A	X	A	X					X		
3	Galv.	3732041G203	21.50	29X202	3732041G248	22.90	29X229	19	23	B	B	X	B	X					X		
3	Fire Enam.	3732041G204	26.90	29X203	3732041G249	28.30	29X230	19	23	C	C	X	C	X					X		
14-INCH CAST-IRON REFLECTOR, NO. 166 LIGHT ALABASTER RIPPLED GLOBE, AND SYM-ETRIC DOME REFRACTOR, CAT. NO. 1340228																					
3	Paint	3732041G391	\$33.50	29X204	3732041G394	\$34.90	29X231	23	29	A	A	X	A	X	X				X	A	
3	Galv.	3732041G392	33.50	29X205	3732041G395	34.90	29X232	23	29	B	B	X	B	X	X				X	A	
3	Fire Enam.	3732041G393	38.90	29X206	3732041G396	40.30	29X233	23	29	C	C	X	C	X	X				X	A	
14-INCH CAST-IRON REFLECTOR, NO. 166 LIGHT ALABASTER RIPPLED GLOBE, AND SYM-ETRIC DOME REFRACTOR, CAT. NO. 3775686																					
3	Paint	3732041G205	\$33.50	.....	3732041G250	\$34.90	.....	23	29	A	A	X	A	X	X				X	B	
3	Galv.	3732041G206	33.50	.....	3732041G251	34.90	.....	23	29	B	B	X	B	X	X				X	B	
3	Fire Enam.	3732041G207	38.90	.....	3732041G252	40.30	.....	23	29	C	C	X	C	X	X				X	B	
14-INCH CAST-IRON REFLECTOR, NO. 166 LIGHT ALABASTER RIPPLED GLOBE, AND A-SYM-ETRIC DOME REFRACTOR, CAT. NO. 2346021																					
3	Paint	3732041G208	\$36.00	29X207	3732041G253	\$37.40	29X234	23	29	A	A	X	A	X	X				X	C	
3	Galv.	3732041G209	36.00	29X208	3732041G254	37.40	29X235	23	29	B	B	X	B	X	X				X	C	
3	Fire Enam.	3732041G210	41.40	29X209	3732041G255	42.80	29X236	23	29	C	C	X	C	X	X				X	C	
14-INCH CAST-IRON REFLECTOR, NO. 166 LIGHT ALABASTER RIPPLED GLOBE, AND B-SYM-ETRIC DOME REFRACTOR, CAT. NO. 2346129																					
3	Paint	3732041G211	\$36.00	29X210	3732041G256	\$37.40	29X237	23	29	A	A	X	A	X	X				X	D	
3	Galv.	3732041G212	36.00	29X211	3732041G257	37.40	29X238	23	29	B	B	X	B	X	X				X	D	
3	Fire Enam.	3732041G213	41.40	29X212	3732041G258	42.80	29X239	23	29	C	C	X	C	X	X				X	D	

* Catalog numbers and prices do not include MAZDA lamps.

† Fixtures composed of parts indicated by "X" or letter "A, B, C, or D." Letter refers to the description under the Fig. No. on pages 136 and 137.

Δ Use part 1 for internal wiring and part 2 for external wiring; both not required.

For use with straight-pipe bracket, order similar to above except with right-angle hood, Fig. 4 or Fig. 6, pages 136 and 137 for internal and external wiring respectively. Add to list price the difference between the part prices of the straight- and right-angle hoods.

Luminaire with No. 176 globe may be equipped with light shield, Cat. No. 4830956G1. Add \$1.85 to list price.

FORM 45-L G-E NOVALUX SUSPENSION LUMINAIRES

For 300-watt Straight Multiple Lamps and for Type IL Transformer Circuits Using 2500-, 4000-, or 6000-lumen Lamps



Fig. 4
(Photograph 720930)
Cast-iron reflector
with No. 176 globe

FIG. NO. COMPLETE LUMINAIRE	FINISH OF HOOD AND REFLECTOR	Internal Wiring			External Wiring			APPROX WT IN LB		FIG. NO. OF PARTS †Refer to Pages 136 and 137 for Illustrations, Description, and Part Price																								
		* CAT. NO.	* LIST PRICE Class GO-51	SUPERSEDED CAT. NO.	* CAT. NO.	* LIST PRICE Class GO-51	SUPERSEDED CAT. NO.	Net	Ship.	Δ	Δ	8	16	18	19	22	2																	
										1	2																							
14-INCH CAST-IRON REFLECTOR AND NO. 176 MEDIUM ALABASTER RIPPLED GLOBE																																		
4	Paint	3732041G214	\$21.50		3732041G259	\$22.90		19	23	A	A	X	A	X																				
4	Galv.	3732041G215	21.50		3732041G260	22.90		19	23	B	B	X	B	X				X																
4	Fire Enam.	3732041G216	26.90		3732041G261	28.30		19	23	C	C	X	C	X				X																
14-INCH CAST-IRON REFLECTOR, NO. 176 LIGHT ALABASTER RIPPLED GLOBE, AND SYM-ETRIC DOME REFRACTOR, CAT. NO. 1340228																																		
4	Paint	3732041G397	\$33.50		3732041G400	\$34.90		23	29	A	A	X	A	X	X	X	A																	
4	Galv.	3732041G398	33.50		3732041G401	34.90		23	29	B	B	X	B	X	X	X	A																	
4	Fire Enam.	3732041G399	38.90		3732041G402	40.30		23	29	C	C	X	C	X	X	X	A																	
14-INCH CAST-IRON REFLECTOR, NO. 176 LIGHT ALABASTER RIPPLED GLOBE, AND SYM-ETRIC DOME REFRACTOR, CAT. NO. 3775686																																		
4	Paint	3732041G217	\$33.50		3732041G262	\$34.90		23	29	A	A	X	A	X	X	X	B																	
4	Galv.	3732041G218	33.50		3732041G263	34.90		23	29	B	B	X	B	X	X	X	B																	
4	Fire Enam.	3732041G219	38.90		3732041G264	40.30		23	29	C	C	X	C	X	X	X	B																	
14-INCH CAST-IRON REFLECTOR, NO. 176 LIGHT ALABASTER RIPPLED GLOBE, AND A-SYM-ETRIC DOME REFRACTOR, CAT. NO. 2346021																																		
4	Paint	3732041G220	\$36.00		3732041G265	\$37.40		23	29	A	A	X	A	X	X	X	C																	
4	Galv.	3732041G221	36.00		3732041G266	37.40		23	29	B	B	X	B	X	X	X	C																	
4	Fire Enam.	3732041G222	41.40		3732041G267	42.80		23	29	C	C	X	C	X	X	X	C																	
14-INCH CAST-IRON REFLECTOR, NO. 176 LIGHT ALABASTER RIPPLED GLOBE, AND B-SYM-ETRIC DOME REFRACTOR CAT. NO. 2346129																																		
4	Paint	3732041G223	\$36.00		3732041G268	\$37.40		23	29	A	A	X	A	X	X	X	D																	
4	Galv.	3732041G224	36.00		3732041G269	37.40		23	29	B	B	X	B	X	X	X	D																	
4	Fire Enam.	3732041G225	41.40		3732041G270	42.80		23	29	C	C	X	C	X	X	X	D																	

* Catalog numbers and prices do not include MAZDA lamps.

† Fixtures composed of parts indicated by "X" or letter "A, B, C or D." Letter refers to the description under the Fig. No. on pages 136 and 137.

Δ Use part 1 for internal wiring and part 2 for external wiring; both not required.

For use with straight-pipe bracket, order similar to above except with right-angle hood, Fig. 4 or Fig. 6, pages 136 and 137 for internal and external wiring respectively. Add to list price the difference between the part prices of the straight- and right-angle hoods.

Luminaire with No. 176 globe may be equipped with light shield, Cat. No. 4830956G1. Add \$1.85 to list price.

FORM 45-L G-E NOVALUX SUSPENSION LUMINAIRES

PART INFORMATION

FIG. NO.	DESCRIPTION	FINISH	CAT. NO.	LIST PRICE Class GO-51	SUPERSEDED CAT. NO.
1A 1B 1C	Straight hood, multiple or series.....	Green Paint	3740149G1	\$4.00	
		Galvanized	3740149G5	4.00	
		Fire Enamel	3740149G6	5.80	
2A 2B 2C	Straight hood with small bushings, multiple.....	Green Paint	3740149G23	5.40	
		Galvanized	3740149G24	5.40	
		Fire Enamel	3740149G25	7.20	
3A 3B 3C	Straight with large bushings, series.....	Green Paint	3740149G14	6.20	
		Galvanized	3740149G15	6.20	
		Fire Enamel	3740149G16	8.00	
4A 4B 4C	Right-angle hood, multiple or series.....	Green Paint	3740148G1	6.00	
		Galvanized	3740148G2	6.00	
		Fire Enamel	3740148G3	7.80	
5A 5B 5C	Right-angle hood with small bushings, multiple.....	Green Paint	3758160G5	7.40	
		Galvanized	3758160G4	7.40	
		Fire Enamel	3758160G6	9.20	
6A 6B 6C	Right-angle hood, with large bushings, series.....	Green Paint	3758160G2	8.20	
		Galvanized	3758160G1	8.20	
		Fire Enamel	3758160G3	10.00	
7	Medium screw-base multiple socket with adjustable support for mounting in hood.....		3740193G1	1.50	
8	Mogul screw-base multiple socket } For mounting in hood.....		3740193G2	1.70	
9			3758137G3	1.70	
10	Series receptacle for mounting in hood.....		4815089G4	2.00	3740189G2
11	Series receptacle with adjustable support for mounting in reflector.....		4815089G3	2.00	3740189G4
12	Series socket.....		4815866G1	1.40	25711
13	18-inch dome radial-wave reflector.....	Fire Enamel	2383057	4.40	
14A	20-inch dome radial-wave reflector.....	Fire Enamel	2383058	4.90	
14B	20-inch dome radial-wave reflector.....	Alzak	4878086	5.50	
15A	20-inch deep dome radial-wave reflector.....	Aluminum	4897140	5.10	
15B	20-inch deep dome radial-wave reflector.....	Fire Enamel	4878607	5.70	
		Alzak			
		Aluminum			
16A 16B 16C	14-inch cast-iron reflector with hinge and latch.....	Green Paint	4830263G4	7.20	3740207G6
		Galvanized	4830263G5	7.20	3740207G21
		Fire Enamel	4830263G6	10.80	3740207G2
16D 16E 16F	14-inch cast-iron reflector without hinge and latch.....	Green Paint	4830263G1	7.20	3740207G5
		Galvanized	4830263G2	7.20	3740207G20
		Fire Enamel	4830263G3	10.80	3740207G1
17A 17B 17C	14-inch deep cast-iron reflector with hinge and latch.....	Green Paint	4830263G10	11.40	3740207G30
		Galvanized	4830263G11	11.40	3740207G31
		Fire Enamel	4830263G12	15.40	3740207G29
17D 17E 17F	14-inch deep cast-iron reflector without hinge and latch.....	Green Paint	4830263G7	11.40	3740207G26
		Galvanized	4830263G8	11.40	3740207G28
		Fire Enamel	4830263G9	15.40	3840207G27
18	Globe holder.....		4815896G1	3.00	
19	Dome refractor holder.....		4888001	.50	2378585
20A	Band or bowl refractor holder.....		4830261G1	3.00	
20B	Combination bowl-refractor and globe holder.....		4830261G2	3.50	
21	No. 166 globe.....			5.60	120
22	No. 176 globe.....			5.60	
23	Light shield for No. 176 globe.....		4830956G1	1.85	
24A	SYM-ETRIC dome refractor.....		1340228	11.50	
24B	SYM-ETRIC dome refractor.....		3775686	11.50	
24C	A-SYM-ETRIC dome refractor.....		2346021	14.00	
24D	B-SYM-ETRIC dome refractor.....		2346129	14.00	
25	8-inch band refractor.....		1327401	9.60	
26A	SYM-ETRIC bowl refractor.....		1340382	11.50	
26B	B-SYM-ETRIC rippled bowl refractor.....		2346181	17.30	
26C	Hi-way rippled bowl refractor.....		3775699	17.30	

FORM 45-L G-E NOVALUX SUSPENSION LUMINAIRES

PART INFORMATION



Fig. 1



Fig. 2



Fig. 3



Fig. 4



Fig. 5



Fig. 6



Fig. 7



Fig. 8



Fig. 9



Fig. 10



Fig. 11



Fig. 12



Fig. 13



Fig. 14



Fig. 15



Fig. 16

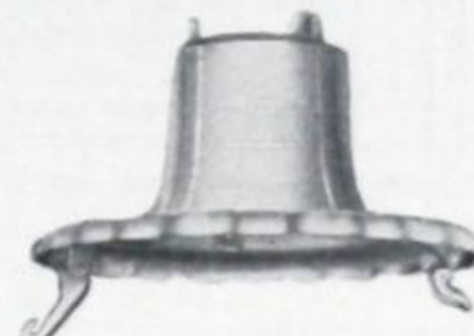


Fig. 17



Fig. 18



Fig. 19



Fig. 20



Fig. 21



Fig. 22



Fig. 23



Fig. 24



Fig. 25



Fig. 26

FORM 46 G-E NOVALUX SUSPENSION LUMINAIRES

For Series Circuits

CONSTRUCTION

Insulator is of the highest-quality dry-process porcelain with green glaze finish.

Has heavy two-screw bronze binding posts to prevent loose connections.

Bronze receptacle clips are reinforced by stainless-steel reinforcing springs to assure good electrical contact throughout life of insulator.

Receptacle clips are easily replaced.

Reflectors are held to insulator by four clips or by cast-aluminum clamp collar. Clamp collar

provides the best known means of attaching reflectors, gives substantial support around reflector, and allows orientation of asymmetric reflectors.

Static leakage starts at about 4.5 kv; flashover wet, 6 kv; breakdown dry, 24 kv.

Has porcelain lead-in tie lugs.

Is adaptable for either radial-wave reflectors or refractors.

Refractor holder has a spring latch which permits relamping with lamp remover.

DETAILS OF CONSTRUCTION

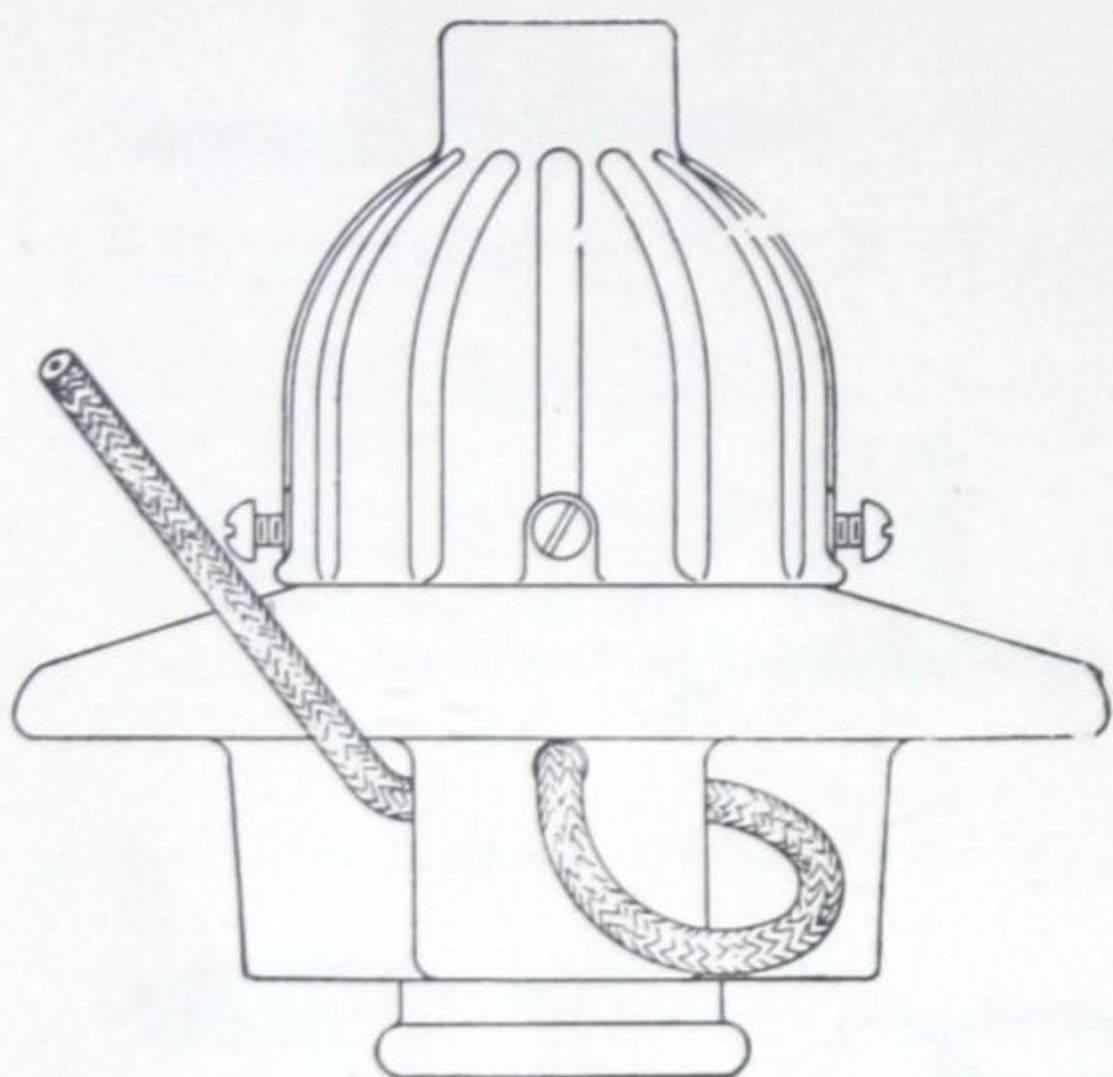


Fig. 1
Method of tying leads through insulator for external wiring

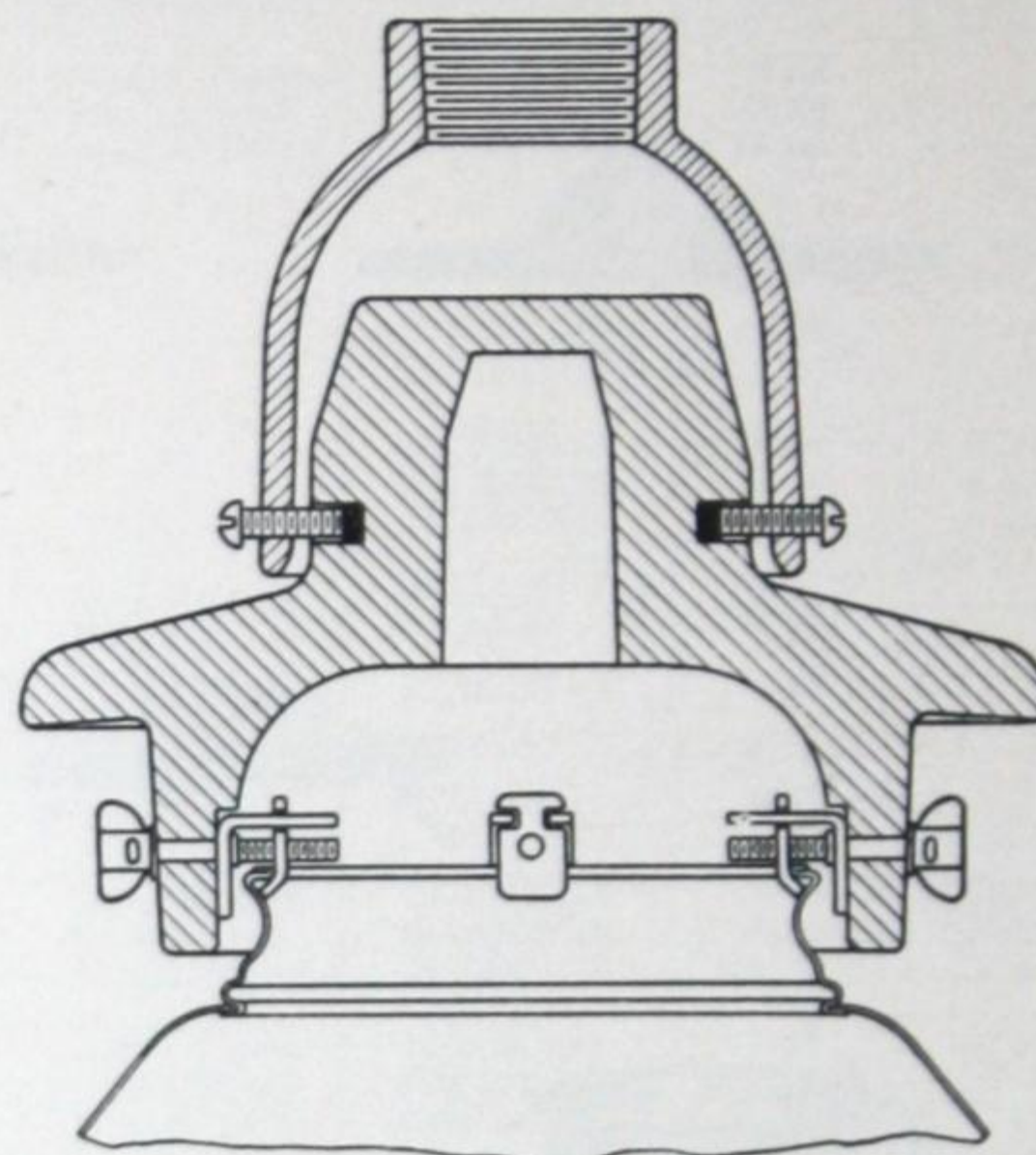


Fig. 2
Cross section of hood and insulator for series bracket showing method of supporting reflector with reflector clips

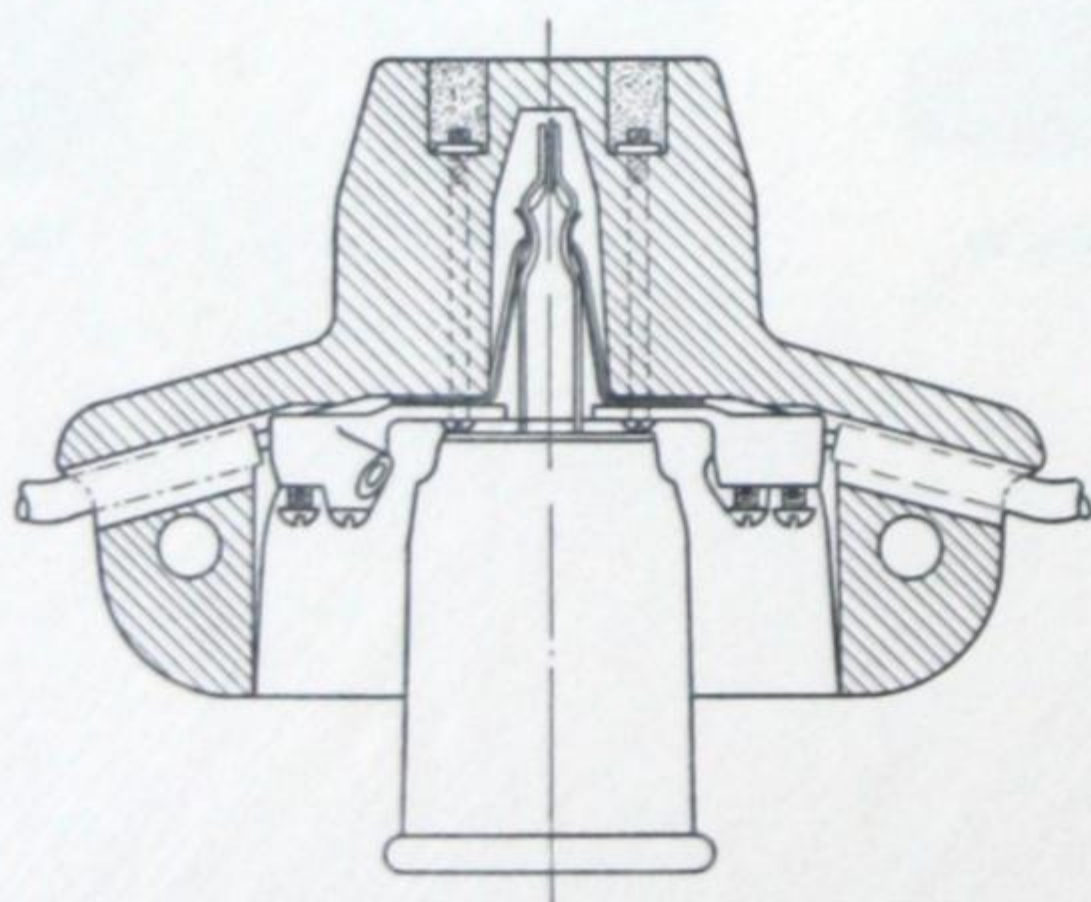


Fig. 3
Cross section of insulator showing external wiring

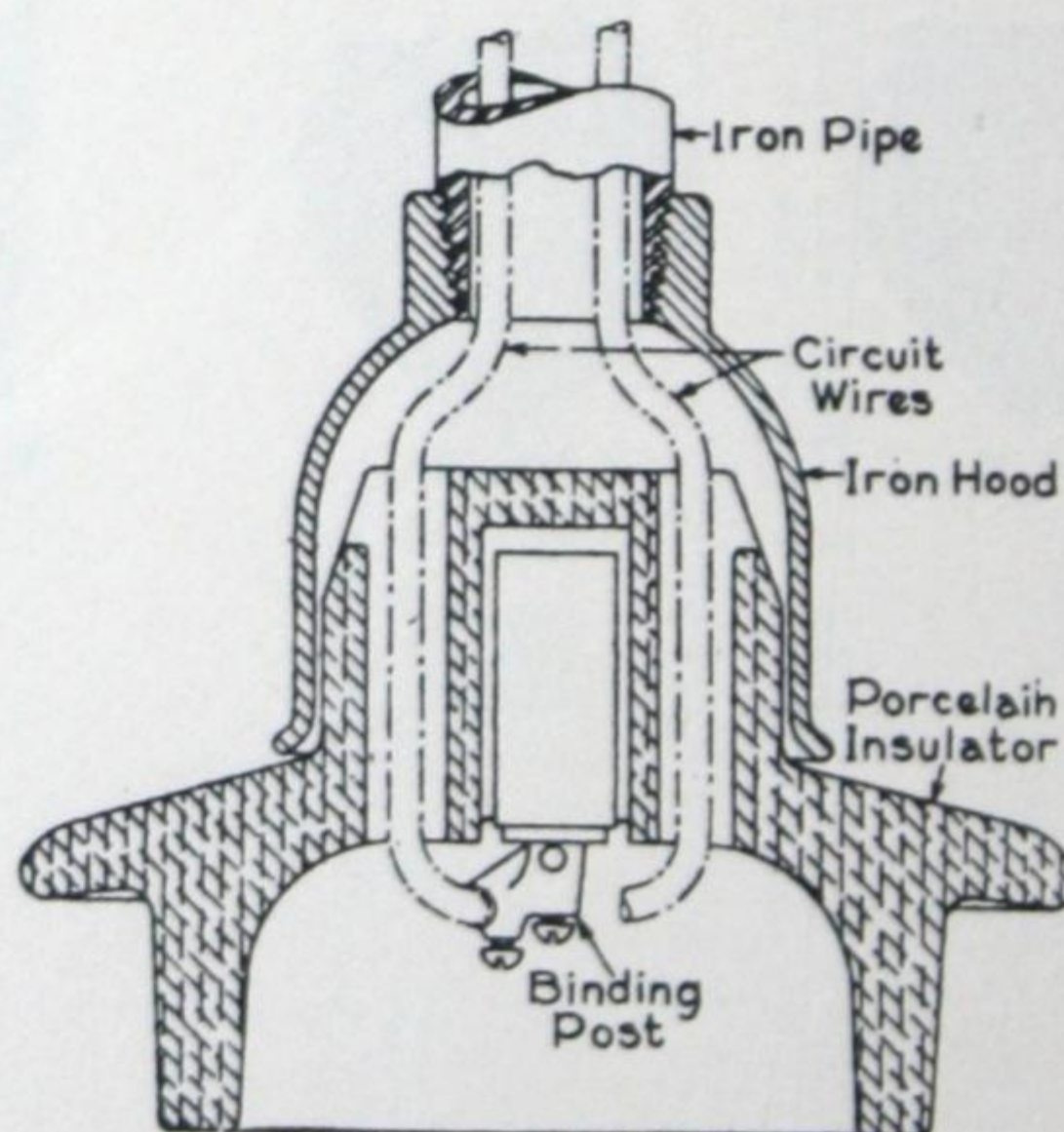


Fig. 4
Cross section of hood and insulator showing internal wiring

FORM 46 G-E NOVALUX SUSPENSION LUMINAIRES

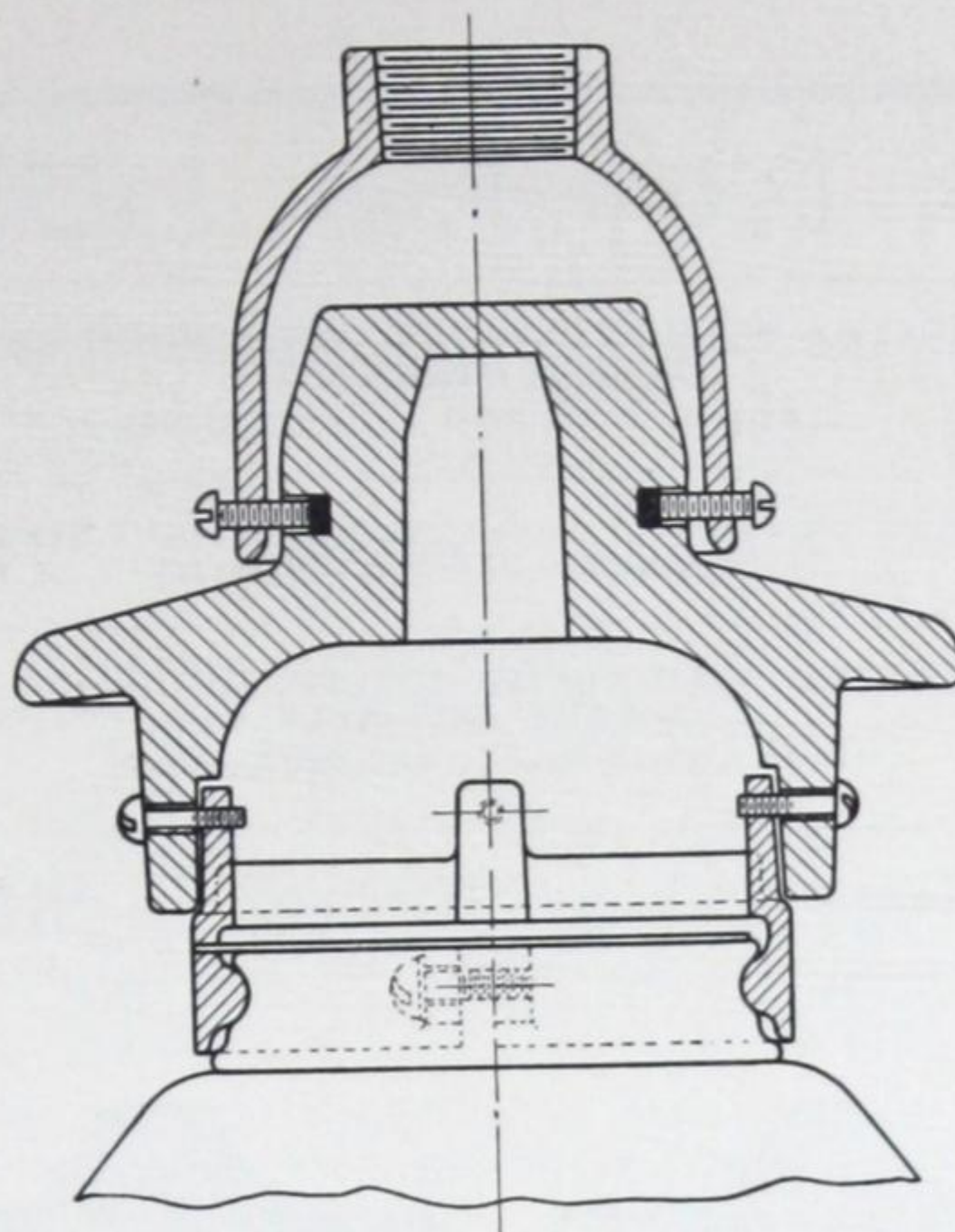


Fig. 5
Cross section of hood and insulator showing method supporting reflector with clamp collar

DIMENSIONS

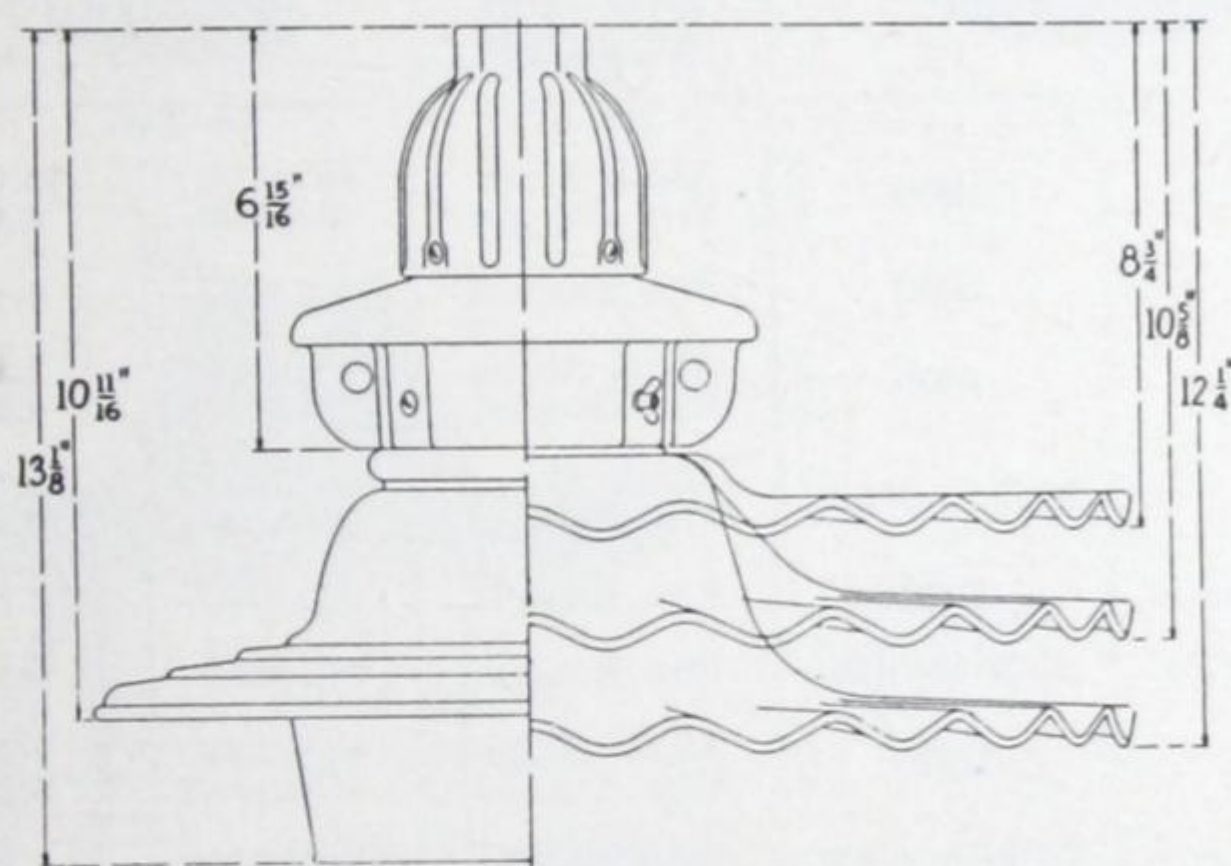


Fig. 6
(Drawing P4865599)
Insulator with reflector holding clips

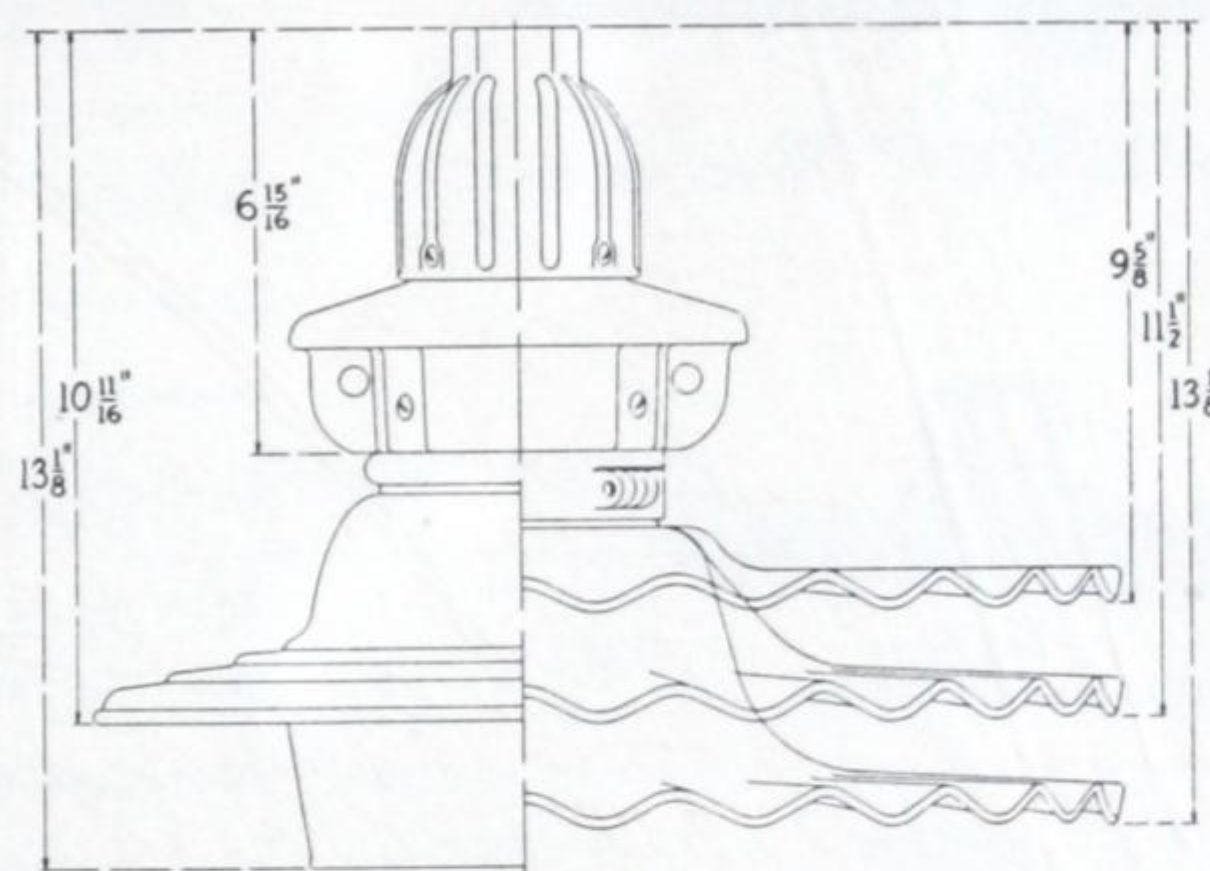


Fig. 7
(Drawing 4865600)
Insulator with clamp collar reflector holder

FORM 46 G-E NOVALUX SUSPENSION LUMINAIRES

For Series Circuits—For Internal or External Wiring



Fig. 1
(Photograph 723846)

Fig. No.	Finish of Hood	* Cat. No.	* List Price Each Class GO-51
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INSULATOR WITH REFLECTOR CLIPS, HOOD AND SOCKET ASSEMBLY

(Add reflector desired as listed below.)

1	Paint	1229481G118	\$11.15
1	Galvanized	1229481G119	11.15

INSULATOR WITH CLAMP COLLAR, HOOD AND SOCKET ASSEMBLY

(Add reflector desired as listed below.)

2	Paint	1229481G120	\$11.65
2	Galvanized	1229481G121	11.65



Fig. 2
(Photograph 723845)



Fig. 3
(Photograph 720834)



Fig. 4
(Photograph 720797)



Fig. 5
(Photograph 720797)



Fig. 6
(Photograph 720796)

RADIAL-WAVE REFLECTORS



Fig. 7
(Photograph 720795)



Fig. 8
(Photograph 720798)



Fig. 9
(Photograph 720181)

Fig. No.	Description	Recommended Lamp Sizes	Finish	Cat. No.	List Price Each Class GO-51
3	20-in. flat.....	1000	Alzak Alum. Fire Enamel	4878192 4888496	\$5.00 4.40
4	18-in. dome.....	1000	Fire Enamel	2383057	4.40
5	20-in. dome.....	1000	Alzak Alum. Fire Enamel	4878086 2383058	5.50 4.90
6	20-in. deep dome.....	2500 to 6000	Alzak Alum. Fire Enamel	4878607 4897140	5.70 5.10
7	20-in. Asy-radial, short collar....	1000	Fire Enamel	2393010	4.90
8	20-in. Asy-radial, long collar....	2500 to 6000	Fire Enamel	3775540	5.10
9	20-in. dome shading.....	1000	Alzak Alum. Fire Enamel	4881996 4884193	7.00 6.40
10	20-in. deep-dome shading.....	2500 to 6000	Fire Enamel	4884560	6.60
11	20-in. concentrating Asy-radial short collar.....	1000	Fire Enamel	4884190	6.40
12	20-in. concentrating Asy-radial, long collar.....	2500 to 6000	Fire Enamel	4884191	6.60

* Cat. No. and prices do not include MAZDA lamps.

For use with straight-pipe bracket, order similar to above except with right-angle-joint hood (Fig. 16, page 141) and add \$2.00 to list price.

Luminaires can be furnished with hoods for 3/4-in. pipe tap at same price.



Fig. 10
(Photograph 720799)



Fig. 11
(Photograph 720800)



Fig. 12
(Photograph 720801)

FORM 46 G-E NOVALUX SUSPENSION LUMINAIRES

For Series Circuits—For Internal or External Wiring



Fig. 13
(Photograph 279968)

Fig. No.	Finish on Hood	Recommended Lamp Sizes	* Cat. No.	* List Price Each Class GO-51
COMPLETE LUMINAIRE WITH 8-IN. BAND REFRACTOR, CAT. NO. 1327401				
13	Paint	} 2500 to 6000 {	20X141	\$30.95
13	Galvanized		20X149	30.95
COMPLETE LUMINAIRE WITH SYM-ETRIC BOWL REFRACTOR, CAT. NO. 1340382				
14	Paint	} 2500 to 6000 {	20X145	\$32.85
14	Galvanized		20X153	32.85
COMPLETE LUMINAIRE WITH B-SYM-ETRIC RIPPLED BOWL REFRACTOR, CAT. NO. 2346181				
14	Paint	} 2500 to 6000 {	20X144	\$38.65
14	Galvanized		20X152	38.65
COMPLETE LUMINAIRE WITH HI-WAY RIPPLED BOWL REFRACTOR, CAT. NO. 3775699				
14	Paint	} 2500 to 6000 {	1229481G122	\$38.65
14	Galvanized		1229481G123	38.65



Fig. 14
(Photograph 723844)

For use with straight-pipe bracket, order similar to above—except with right-angle-joint hood (Fig. 16) and add \$2.00 to list price.

Luminaires can be furnished with hoods for 3/4-in. pipe tap at the same price.



Fig. 15



Fig. 16



Fig. 17



Fig. 18
(Photograph 723848)



Fig. 19
(Photograph 723849)



Fig. 20
(Photograph 720375)



Fig. 21
(Photograph 723847)



Fig. 22
(Photograph 262252)



Fig. 23
(Photograph 467661)

REPLACEMENT PARTS

Fig. No.	Description	Finish	Cat. No.	List Price Each Class GO-51
15	Hood, 1 1/4-in. pipe tap.....	Green Paint Galvanized	3740898G3 3740898G2	\$1.40 1.40
15	Hood, 3/4-in. pipe tap.....	Green Paint Galvanized	3740899G3 3740899G2	1.40 1.40
16	Hood, right-angle joint, 1 1/4-in.....	Green Paint Galvanized	110918 20X964	3.40 3.40
17	Insulator with reflector clips.....	Green Glaze	269767	8.35
18	Insulator with clamp collar.....	Green Glaze	4815172G1	8.85
17	Insulator for refractor canopies.....	Green Glaze	269768	7.35
19	Clamp collar.....	Natural Alum.	3758544G1	2.25
20	Series socket.....	White Porcelain	4815866G1	1.40
21	Refractor canopy for 8-in. refractors.....	Green Paint	1212349G22	11.20
22	8-in. band refractor.....		1327401	9.60
23	Sym-etric bowl refractor.....		1340382	11.50
23	B-sym-etric rippled bowl refractor.....		2346181	17.30
23	Hi-way rippled bowl refractor.....		3775699	17.30

* Cat. No. and prices do not include MAZDA lamps.

FORM 47 G-E NOVALUX ETERNALITE SUSPENSION LUMINAIRES

For All Series Circuits

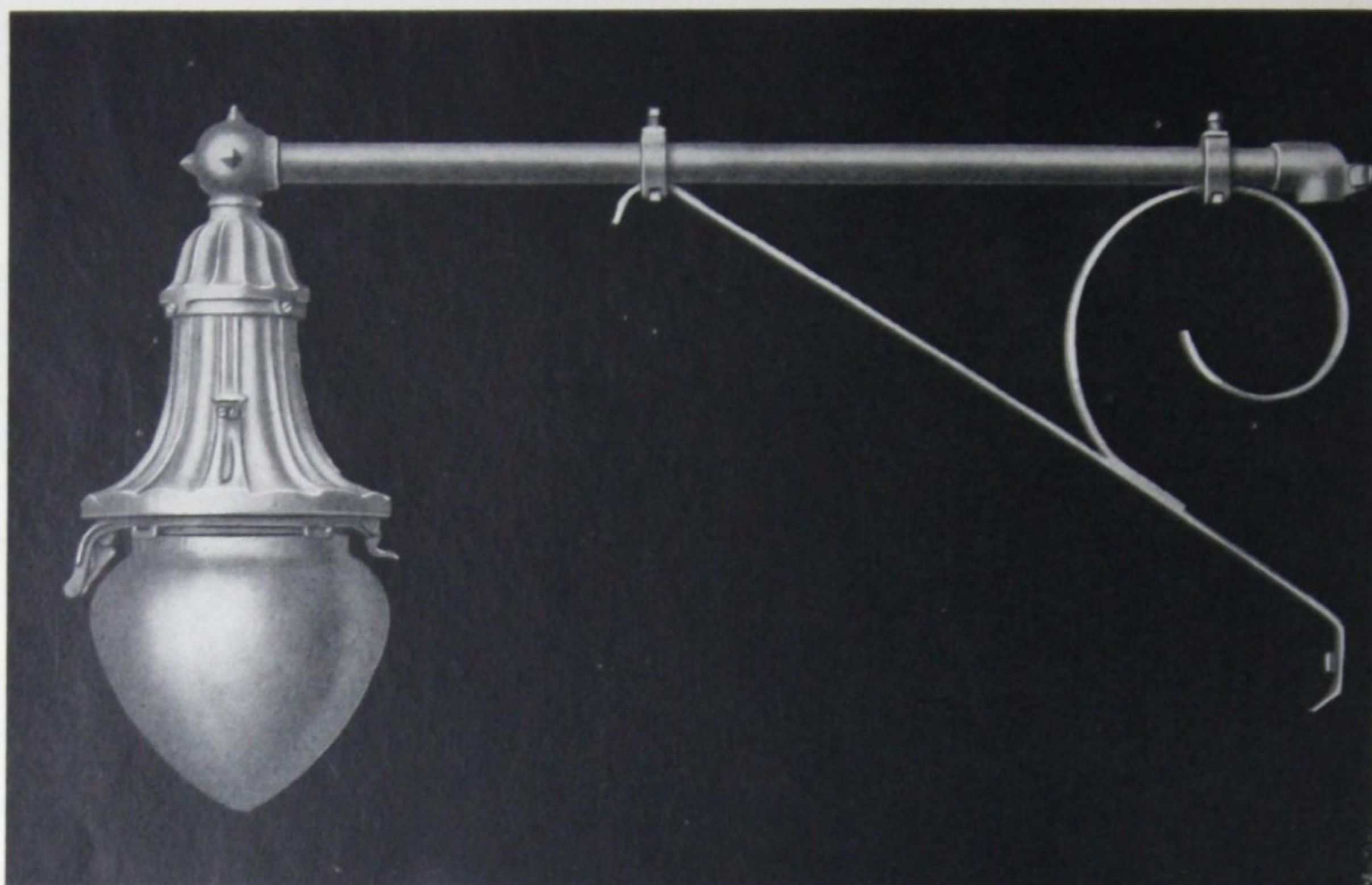


Fig. 1

(Photograph 720782)

Form 47 Eternalite suspension luminaire mounted on right-angle-joint bracket and equipped with No. 166 rippled globe

APPLICATION

Form 47 Novalux Eternalite luminaires are recommended for installation in residential sections, or main thoroughfares, and on secondary business streets or highways. They are suitable for use on any street-lighting circuit.

These luminaires have one outstanding feature—the porcelain body is a combined casing, insulator, and reflector. The changes in the lamp and glassware combinations are readily accomplished to meet all requirements that may develop in the community served.

ADVANTAGES

1. Low maintenance expense.
2. No rattling, discolored reflectors.
3. No depreciation in efficiency of reflecting surface.
4. Great mechanical and electrical strengths. High insulation, 25,000-volt test.
5. Efficiency, economy, and endurance.

CONSTRUCTION

The Form 47 Novalux Eternalite luminaire consists of a cast-iron hood, a porcelain combined insulator and reflector, a series socket and receptacle, and refractor or enclosing globe as required.

Two cast-iron hoods are provided, one with a straight 1¼-in. pipe tap, and one with a right-angle-joint, 1¼-in. pipe tap. These hoods may be

finished in green paint, hot-dip galvanized, or green fired enamel.

The porcelain combined insulator and reflector provides high mechanical and dielectric strength. It is finished with a green glaze on the outside and a white glaze on the reflecting surface. The porcelain body is made in two types, one for external wiring, and one for internal wiring. When an externally wired luminaire is furnished, the metal tie lugs and binding posts are mounted outside the reflector.

For internally wired luminaires, the binding posts are mounted on the series receptacle or multiple socket, and an opening is provided at the top of the porcelain for the lead-in wires.

A hinge and latch fitting may be added to support the glassware from these reflectors. The bowl-and-band refractor holders consist of a cast-aluminum ring with rigid hinge and latch fittings, which assures an even tension against the reflector at all times. Felt is cemented to the aluminum rings and provides a long-life gasket, facilitates servicing, and insures a dustproof and insectproof device. The No. 166 globe has a holder similar to the refractor holder except that the inside opening is of sufficient diameter to allow the globe to swing by the dome refractor. If a dome refractor is required, a refractor holder is provided which may be attached to the reflector by the same screws that hold the hinge and latch fitting.

FORM 47 G-E NOVALUX ETERNALITE SUSPENSION LUMINAIRES

For Use on All Series Circuits

FOR 2500- to -10,000-LUMEN LAMPS



Fig. 1
(Photograph 720787)
Reflector only



Fig. 2
(Photograph 720783)
With band refractor



Fig. 3
(Photograph 720784)
With bowl refractor

FIG. NO. Complete Lumi- naire	FINISH OF HOOD	* CAT. NO.		* LIST PRICE Class GO-51	APPROX WT IN LB		△ FIG. NO. OF PARTS FOR EXTERNAL WIRING. † Refer to page 145 for Illustrations, Descrip- tion, and Part Price											
		Internal Wiring	External Wiring		Net	Ship.	1	3	4	5	6	7	8	9	10	11	12	
REFLECTOR ONLY																		
1	Paint	1229484G94	1229484G64	\$23.55	32	45	A	A	X									
1	Galv.	1229484G95	1229484G65	23.55	32	45	B	A	X									
1	Fire Enamel	1229484G96	1229484G66	24.05	32	45	C	A	X									
WITH 8-INCH BAND REFRACTOR, CAT. NO. 1327401																		
2	Paint	1229484G103	1229484G73	\$36.15	35	52	A	B	X	A				X				
2	Galv.	1229484G104	1229484G74	36.15	35	52	B	B	X	A				X				
2	Fire Enamel	1229484G105	1229484G75	36.65	35	52	C	B	X	A				X				
WITH SYM-ETRIC BOWL REFRACTOR, CAT. NO. 1340382																		
3	Paint	1229484G100	1229484G70	\$38.05	38	55	A	B	X	A					A			
3	Galv.	1229484G101	1229484G71	38.05	38	55	B	B	X	A					A			
3	Fire Enamel	1229484G102	1229484G72	38.55	38	55	C	B	X	A					A			
WITH B-SYM-ETRIC RIPPLED BOWL REFRACTOR, CAT. NO. 2346181																		
3	Paint	1229484G97	1229484G67	\$43.85	38	59	A	B	X	A					B			
3	Galv.	1229484G98	1229484G68	43.85	38	59	B	B	X	A					B			
3	Fire Enamel	1229484G99	1229484G69	44.35	38	59	C	B	X	A					B			
WITH HI-WAY RIPPLED BOWL REFRACTOR, CAT. NO. 3775699																		
3	Paint	1229484G235	1229484G232	\$43.85	38	59	A	B	X	A					C			
3	Galv.	1229484G236	1229484G233	43.85	38	59	B	B	X	A					C			
3	Fire Enamel	1229484G237	1229484G234	44.35	38	59	C	B	X	A					C			
WITH NO. 166 MEDIUM ALABASTER RIPPLED GLOBE																		
4	Paint	1229484G112	1229484G82	\$32.15	37	51	A	B	X			X					X	
4	Galv.	1229484G113	1229484G83	32.15	37	51	B	B	X			X					X	
4	Fire Enamel	1229484G114	1229484G84	32.65	37	51	C	B	X			X					X	
WITH NO. 166 LIGHT ALABASTER RIPPLED GLOBE AND SYM-ETRIC DOME REFRACTOR, CAT. NO. 1340228																		
4	Paint	1229484G115	1229484G85	\$44.15	41	59	A	B	X		X	X			A	X		
4	Galv.	1229484G116	1229484G86	44.15	41	59	B	B	X		X	X			A	X		
4	Fire Enamel	1229484G117	1229484G87	44.65	41	59	C	B	X		X	X			A	X		
WITH NO. 166 LIGHT ALABASTER RIPPLED GLOBE AND SYM-ETRIC DOME REFRACTOR, CAT. NO. 3775686																		
4	Paint	1229484G249	1229484G246	\$44.15	41	59	A	B	X		X	X			B	X		
4	Galv.	1229484G250	1229484G247	44.15	41	59	B	B	X		X	X			B	X		
4	Fire Enamel	1229484G251	1229484G248	44.65	41	59	C	B	X		X	X			B	X		
WITH NO. 166 LIGHT ALABASTER RIPPLED GLOBE AND A-SYM-ETRIC DOME REFRACTOR, CAT. NO. 2346021																		
4	Paint	1229484G118	1229484G88	\$46.65	41	59	A	B	X		X	X			C	X		
4	Galv.	1229484G119	1229484G89	46.65	41	59	B	B	X		X	X			C	X		
4	Fire Enamel	1229484G120	1229484G90	47.15	41	59	C	B	X		X	X			C	X		
WITH NO. 166 LIGHT ALABASTER RIPPLED GLOBE AND B-SYM-ETRIC DOME REFRACTOR, CAT. NO. 2346129																		
4	Paint	1229484G121	1229484G91	\$46.65	41	59	A	B	X		X	X			D	X		
4	Galv.	1229484G122	1229484G92	46.65	41	59	B	B	X		X	X			D	X		
4	Fire Enamel	1229484G123	1229484G93	47.15	41	59	C	B	X		X	X			D	X		
WITH NO. 176 MEDIUM ALABASTER RIPPLED GLOBE																		
5	Paint	1229484G136	1229484G124	\$32.15	37	59	A	B	X			X					X	
5	Galv.	1229484G137	1229484G125	32.15	37	59	B	B	X			X					X	
5	Fire Enamel	1229484G138	1229484G126	32.65	37	59	C	B	X			X					X	
WITH NO. 176 LIGHT ALABASTER RIPPLED GLOBE AND SYM-ETRIC DOME REFRACTOR, CAT. NO. 1340228																		
5	Paint	1229484G139	1229484G127	\$44.15	41	59	A	B	X		X	X			A	X		
5	Galv.	1229484G140	1229484G128	44.15	41	59	B	B	X		X	X			A	X		
5	Fire Enamel	1229484G141	1229484G129	44.65	41	59	C	B	X		X	X			A	X		
WITH NO. 176 LIGHT ALABASTER RIPPLED GLOBE AND SYM-ETRIC DOME REFRACTOR, CAT. NO. 3775686																		
5	Paint	1229484G255	1229484G252	\$44.15	41	59	A	B	X		X	X			B	X		
5	Galv.	1229484G256	1229484G253	44.15	41	59	B	B	X		X	X			B	X		
5	Fire Enamel	1229484G257	1229484G254	44.65	41	59	C	B	X		X	X			B	X		
WITH NO. 176 LIGHT ALABASTER RIPPLED GLOBE AND A-SYM-ETRIC DOME REFRACTOR, CAT. NO. 2346021																		
5	Paint	1229484G142	1229484G130	\$46.65	41	59	A	B	X		X	X			C	X		
5	Galv.	1229484G143	1229484G131	46.65	41	59	B	B	X		X	X			C	X		
5	Fire Enamel	1229484G144	1229484G132	47.15	41	59	C	B	X		X	X			C	X		
WITH NO. 176 LIGHT ALABASTER RIPPLED GLOBE AND B-SYM-ETRIC DOME REFRACTOR, CAT. NO. 2346129																		
5	Paint	1229484G145	1229484G133	\$46.65	41	59	A	B	X		X	X			D	X		
5	Galv.	1229484G146	1229484G134	46.65	41	59	B	B	X		X	X			D	X		
5	Fire Enamel	1229484G147	1229484G135	47.15	41	59	C	B	X		X	X			D	X		

* Cat. Numbers and prices do not include MAZDA lamps.

† Fixtures composed of parts indicated by "X" or letter "A, B, C, or D." Letter refers to description under Fig. No. on page 145.

△ For internal wiring, replace 3A by 3C and 3B by 3D.

For use with straight-pipe bracket, order similar to above except with right-angle-joint hood, Fig. 2, page 145. Add \$2.00 to list price.

Do not deduct renewal-part prices for omission of parts from above luminaires.

FORM 47 G-E NOVALUX ETERNALITE SUSPENSION LUMINAIRES

For Multiple or Type IL Transformer Circuits

FOR 300- OR 500-WATT MULTIPLE OR 2500- TO 10,000-LUMEN SERIES LAMPS

FIG. NO. Complete Lumi- naire	FINISH OF HOOD	* CAT. NO.		* LIST PRICE Class GO-51	APPROX WT IN LB		△ FIG. NO. OF PARTS FOR EXTERNAL WIRING † Refer to Page 145 for Illustrations, Descrip- tion and Part Price											
		Internal Wiring	External Wiring		Net	Ship.	1	△	3	5	6	7	8	9	10	11	12	
REFLECTOR ONLY																		
1	Paint	1229484G178	1229484G148	\$21.85	32	45	A	E										
1	Galv.	1229484G179	1229484G149	21.85	32	45	B	E										
1	Fire Enamel	1229484G180	1229484G150	22.35	32	45	C	E										
WITH 8-INCH BAND REFRACTOR, CAT. NO. 1327401																		
2	Paint	1229484G187	1229484G157	\$34.45	35	52	A	F	A				X					
2	Galv.	1229484G188	1229484G158	34.45	35	52	B	F	A				X					
2	Fire Enamel	1229484G189	1229484G159	34.95	35	52	C	F	A				X					
WITH SYM-ETRIC BOWL REFRACTOR, CAT. NO. 1340382																		
3	Paint	1229484G184	1229484G154	\$36.35	38	55	A	F	A					A				
3	Galv.	1229484G185	1229484G155	36.35	38	55	B	F	A					A				
3	Fire Enamel	1229484G186	1229484G156	36.85	38	55	C	F	A					A				
WITH B-SYM-ETRIC RIPPLED BOWL REFRACTOR, CAT. NO. 2346181																		
3	Paint	1229484G181	1229484G151	\$42.15	38	59	A	F	A					B				
3	Galv.	1229484G182	1229484G152	42.15	38	59	B	F	A					B				
3	Fire Enamel	1229484G183	1229484G153	42.65	38	59	C	F	A					B				
WITH HI-WAY RIPPLED BOWL REFRACTOR, CAT. NO. 3775699																		
3	Paint	1229484G241	1229484G238	\$42.15	38	59	A	F	A					C				
3	Galv.	1229484G242	1229484G239	42.15	38	59	B	F	A					C				
3	Fire Enamel	1229484G243	1229484G240	42.65	38	59	C	F	A					C				
WITH NO. 166 MEDIUM ALABASTER RIPPLED GLOBE																		
4	Paint	1229484G196	1229484G166	\$30.45	37	51	A	F			X					X		
4	Galv.	1229484G197	1229484G167	30.45	37	51	B	F			X					X		
4	Fire Enamel	1229484G198	1229484G168	30.95	37	51	C	F			X					X		
WITH NO. 166 LIGHT ALABASTER RIPPLED GLOBE AND SYM-ETRIC DOME REFRACTOR, CAT. NO. 1340228																		
4	Paint	1229484G199	1229484G169	\$42.45	41	59	A	F		X	X			A	X			
4	Galv.	1229484G200	1229484G170	42.45	41	59	B	F		X	X			A	X			
4	Fire Enamel	1229484G201	1229484G171	42.95	41	59	C	F		X	X			A	X			
WITH NO. 166 LIGHT ALABASTER RIPPLED GLOBE AND SYM-ETRIC DOME REFRACTOR, CAT. NO. 3775686																		
4	Paint	1229484G261	1229484G258	\$42.45	41	59	A	F		X	X			B	X			
4	Galv.	1229484G262	1229484G259	42.45	41	59	B	F		X	X			B	X			
4	Fire Enamel	1229484G263	1229484G260	42.95	41	59	C	F		X	X			B	X			
WITH NO. 166 LIGHT ALABASTER RIPPLED GLOBE AND A-SYM-ETRIC DOME REFRACTOR, CAT. NO. 2346021																		
4	Paint	1229484G202	1229484G172	\$44.95	41	59	A	F		X	X			C	X			
4	Galv.	1229484G203	1229484G173	44.95	41	59	B	F		X	X			C	X			
4	Fire Enamel	1229484G204	1229484G174	45.45	41	59	C	F		X	X			C	X			
WITH NO. 166 LIGHT ALABASTER RIPPLED GLOBE AND B-SYM-ETRIC DOME REFRACTOR, CAT. NO. 2346129																		
4	Paint	1229484G205	1229484G175	\$44.95	41	59	A	F		X	X			D	X			
4	Galv.	1229484G206	1229484G176	44.95	41	59	B	F		X	X			D	X			
4	Fire Enamel	1229484G207	1229484G177	45.45	41	59	C	F		X	X			D	X			
WITH NO. 176 MEDIUM ALABASTER RIPPLED GLOBE																		
5	Paint	1229484G220	1229484G208	\$30.45	37	59	A	F			X						X	
5	Galv.	1229484G221	1229484G209	30.45	37	59	B	F			X						X	
5	Fire Enamel	1229484G222	1229484G210	30.95	37	59	C	F			X						X	
WITH NO. 176 LIGHT ALABASTER RIPPLED GLOBE AND SYM-ETRIC DOME REFRACTOR, CAT. NO. 1340228																		
5	Paint	1229484G223	1229484G211	\$42.45	41	59	A	F		X	X			A	X			
5	Galv.	1229484G224	1229484G212	42.45	41	59	B	F		X	X			A	X			
5	Fire Enamel	1229484G225	1229484G213	42.95	41	59	C	F		X	X			A	X			
WITH NO. 176 LIGHT ALABASTER RIPPLED GLOBE AND SYM-ETRIC DOME REFRACTOR, CAT. NO. 3775686																		
5	Paint	1229484G267	1229484G264	\$42.45	41	59	A	F		X	X			B	X			
5	Galv.	1229484G268	1229484G265	42.45	41	59	B	F		X	X			B	X			
5	Fire Enamel	1229484G269	1229484G266	42.95	41	59	C	F		X	X			B	X			
WITH NO. 176 LIGHT ALABASTER RIPPLED GLOBE AND A-SYM-ETRIC DOME REFRACTOR, CAT. NO. 2346021																		
5	Paint	1229484G226	1229484G214	\$44.95	41	59	A	F		X	X			C	X			
5	Galv.	1229484G227	1229484G215	44.95	41	59	B	F		X	X			C	X			
5	Fire Enamel	1229484G228	1229484G216	45.45	41	59	C	F		X	X			C	X			
WITH NO. 176 LIGHT ALABASTER RIPPLED GLOBE AND B-SYM-ETRIC DOME REFRACTOR, CAT. NO. 2346129																		
5	Paint	1229484G229	1229484G217	\$44.95	41	59	A	F		X	X			D	X			
5	Galv.	1229484G230	1229484G218	44.95	41	59	B	F		X	X			D	X			
5	Fire Enamel	1229484G231	1229484G219	45.45	41	59	C	F		X	X			D	X			

* Cat. Numbers and prices do not include MAZDA lamps.

† Fixtures composed of parts indicated by "X" or letter "A, B, C, D, E, or F." Letters refer to description under Fig. No. on page 145.

△ For internal wiring, replace 3E by 3G and 3F by 3H.

For use with straight-pipe bracket, order similar to above except with right-angle-joint hood, Fig. 2, page 145. Add \$2.00 to list price.

Do not deduct renewal-part prices for omission of parts from above luminaires.



Fig. 4
(Photograph 720785)
With No. 166 globe



Fig. 5
(Photograph 720786)
With No. 176 globe

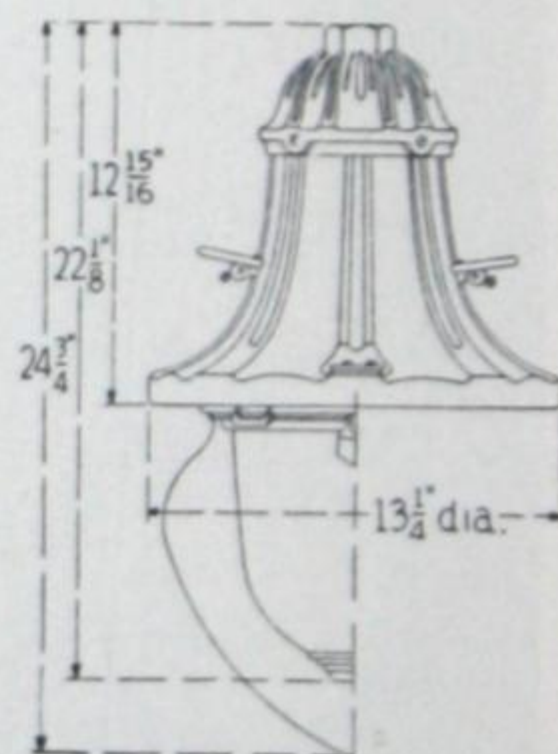


Fig. 6
(Drawing K-4821706)
Dimensions

FORM 47 G-E NOVALUX ETERNALITE SUSPENSION LUMINAIRES

PART INFORMATION



Fig. 1



Fig. 2



Fig. 3



Fig. 4



Fig. 5



Fig. 6



Fig. 7



Fig. 8



Fig. 9



Fig. 10



Fig. 11



Fig. 12



Fig. 13

FIG. NO.	DESCRIPTION	CAT. NO.	LIST PRICE Class GO-51	SUPERSEDED CAT. NO.
1A 1B 1C	Straight hood, 1 1/4-in. pipe tap { Green paint finish. Galvanized finish. Fire enamel finish.	1217683G6 1217683G5 1217683G7	\$2.80 2.80 4.20	
2A 2B 2C	Right-angle-joint hood, 1 1/4-in. pipe tap { Green paint finish. Galvanized finish. Fire enamel finish.	1272447G3 1272447G2 1272447G4	4.80 4.80 6.20	
3A 3B 3C	Eternalite porcelain insulator { With tie lugs and series receptacle; for external wiring. With tie lugs, series receptacle, and hinge and latch; for external wiring. With series receptacle; for internal wiring.	4830322G1 4830322G2 4830322G3	20.75 20.75 20.75	3740328G1 3740328G2 { 4815252G3 3740328G4
3D 3E 3F	Eternalite porcelain insulator { With series receptacle and hinge and latch; for internal wiring. With tie lugs and multiple socket; for external wiring. With tie lugs, multiple socket, and hinge and latch; for external wiring.	4830322G4 4830322G5 4830322G6	20.75 20.75 20.75	{ 4815252G4 3740328G5 3740328G7 3740328G8
3G 3H	Eternalite porcelain insulator { With multiple socket; for internal wiring. With multiple socket and hinge and latch; for internal wiring.	4830322G7 4830322G8	20.75 20.75	3740328G9 3740328G10
4	Series socket.	4815866G1	1.40	
5A	Band or bowl refractor holder.	4830261G1	3.00	25711
5B	Combination bowl refractor and globe holder.	4830261G2	3.50	
6	Dome refractor holder.	4888001	.50	2378585
7	Globe holder.	4815896G1	3.00	
8	8-inch band refractor.	1327401	9.60	
9A	Sym-ettric bowl refractor.	1340382	11.50	
9B	B-sym-ettric rippled bowl refractor.	2346181	17.30	
9C	Hi-way rippled bowl refractor.	3775699	17.30	
10A	Sym-ettric dome refractor.	1340228	11.50	
10B	Sym-ettric dome refractor.	3775686	11.50	
10C	A-sym-ettric dome refractor.	2346021	14.00	
10D	B-sym-ettric dome refractor.	2346129	14.00	
11	No. 166 globe. . . . .	.....	5.60	
12	No. 176 globe. . . . .	.....	5.60	
13	Light shield for No. 176 globe.	4830956G1	1.85	

FORM 52 G-E NOVALUX SUSPENSION LUMINAIRE

For Operation on Multiple and Series Circuits Up to 5000 Volts

The Form 52 Novalux luminaire is designed particularly to utilize the increased efficiency obtained by using the new 11-in. refractor. This unit may be applied to good advantage on boulevards, main thoroughfares, highways, and any

CONSTRUCTION

Externally, the Form 52 is a unit of excellent appearance and will harmonize well with practically any surrounding. The hood, or casing, is a casting which may be furnished in cast-iron, painted green,



Fig. 1

(Photograph 718914)

Form 52 Novalux suspension luminaire with 11-in. refractor

other place where a pendent unit with excellent appearance and high efficiency is required. The unit may be installed on series systems using 2500-, 4000-, or 6000-lumen lamps for operation on 6.6-ampere circuit; since the 4000-, 6000-, and 10,000-lumen lamps operate more efficiently on 15- and 20-amp than on 6.6-amp circuits, the use of IL type transformers for the purpose of stepping up the current is recommended in these instances. Lamps rated as high as 10,000 lumens may be used in this unit on series circuits. On multiple circuits, lamps rated as high as 500 watts may be used. The fact that these large-size lamps are applicable in this unit puts it in step with the present trend of good lighting practice.

or in galvanized or cast-aluminum in natural finish or painted. The hood is also equipped with an external adjusting mechanism which permits the adjustment of the lamp to the proper light center with respect to the refractor—a consideration that is essential for correct distribution. The new rigid-hinge and latch refractor holder is incorporated in the design of this fixture. This holder insures an insect-tight fit for the refractor against the casing. It is also notched, which prevents the refractor from slipping out of position because of vibration or relamping. The new hinge and latch permits relamping from the ground with the assistance of a lamp replacer. The 11-in. refractor with peephole is an essential feature of this fixture. It is highly efficient, and the peephole makes possible positive adjustment.

FORM 52 G-E NOVALUX SUSPENSION LUMINAIRE

For Operation on Multiple and Series Circuits Up to 5000 Volts

ADVANTAGES

1. Lamps rated as high as 10,000 lumens on series circuits and 500 watts on multiple circuits may be used with this fixture.
2. External adjusting mechanism facilitates setting of lamp with respect to refractor.
3. Rigid hinge and latch arrangement assures insect-tight fit against casing.
4. Refractor and holder clamped to prevent refractor slipping and spoiling adjustment.
5. Peephole arrangement in the 11-in. refractor assures definite angle of refraction of the light through the refractor.

MATERIAL AND FINISH OF CASING	With Alzak Aluminum Reflector				Without Reflector				APPROX WT IN LB	
	SERIES		MULTIPLE (MOGUL)		SERIES		MULTIPLE (MOGUL)		Net	Ship.
	Cat. No.	List Price Class	Cat. No.	List Price Class	Cat. No.	List Price Class	Cat. No.	List Price Class		
		*GO-51		*GO-51		*GO-51		*GO-51		
WITH 11-IN. B-SYM-ETRIC RIPPLED BOWL REFRACTOR, CAT. NO. 3775588										
Cast Iron—Green Painted	3732018G12	\$56.70	3732018G16	\$55.00	3732018G5	\$52.70	3732018G9	\$51.00	34	58
Cast Iron—Galvanized	3732018G13	56.70	3732018G17	55.00	3732018G6	52.70	3732018G10	51.00	34	58
Aluminum—No Finish	3732018G11	62.50	3732018G15	60.80	3732018G4	58.50	3732018G8	56.80	34	58
WITH 11-IN. B-WAY BOWL REFRACTOR, SATIN FINISH, CAT. NO. 3778146										
Cast Iron—Green Painted	3732018G27	\$56.70	3732018G30	\$55.00	3732018G21	\$52.70	3732018G24	\$51.00	34	58
Cast Iron—Galvanized	3732018G28	56.70	3732018G31	55.00	3732018G22	52.70	3732018G25	51.00	34	58
Aluminum—No Finish	3732018G26	62.50	3732018G29	60.80	3732018G20	58.50	3732018G23	56.80	34	58
WITH 11-IN. SYM-ETRIC BOWL REFRACTOR, VELVET FINISH, CAT. NO. 3778148										
Cast Iron—Green Painted	3732018G39	\$51.00	3732018G42	\$49.30	3732018G33	\$47.00	3732018G36	\$45.30	34	58
Cast Iron—Galvanized	3732018G40	51.00	3732018G43	49.30	3732018G34	47.00	3732018G37	45.30	34	58
Aluminum—No Finish	3732018G38	56.80	3732018G41	55.10	3732018G32	52.80	3732018G35	51.10	34	58

* Prices and Cat. No. do not include MAZDA lamps.

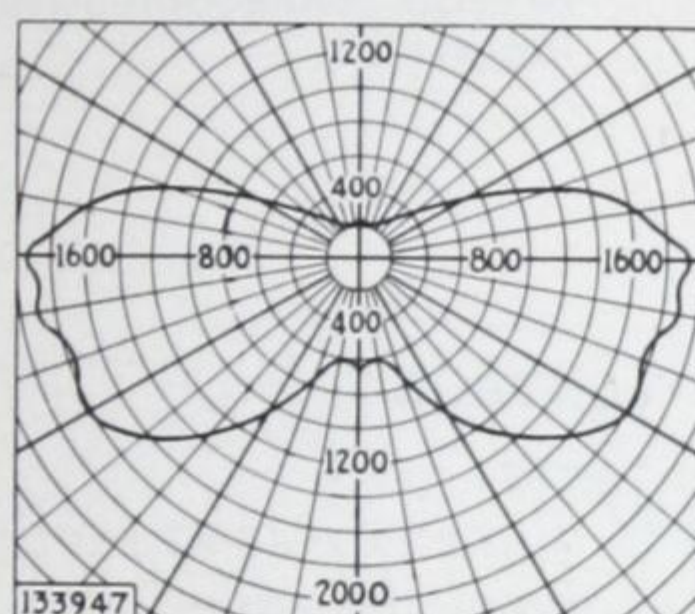


Fig. 2
Form 52 luminaire with 11-in.
B-Sym-Etric rippled bowl re-
fractor and glass reflector,
distribution of initial cp
in 75-degree cone

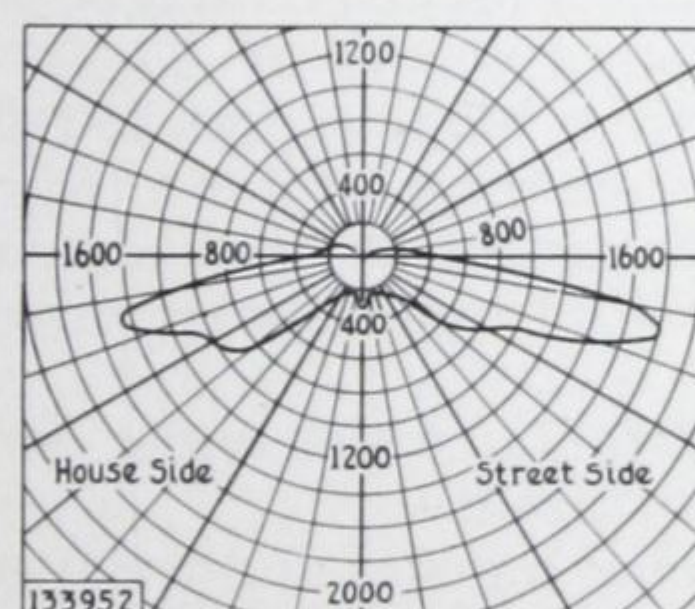


Fig. 3
Form 52 luminaire with 11-in.
B-Sym-Etric rippled bowl re-
fractor and glass reflector,
distribution of initial cp
in a vertical plane 15
degrees from curb

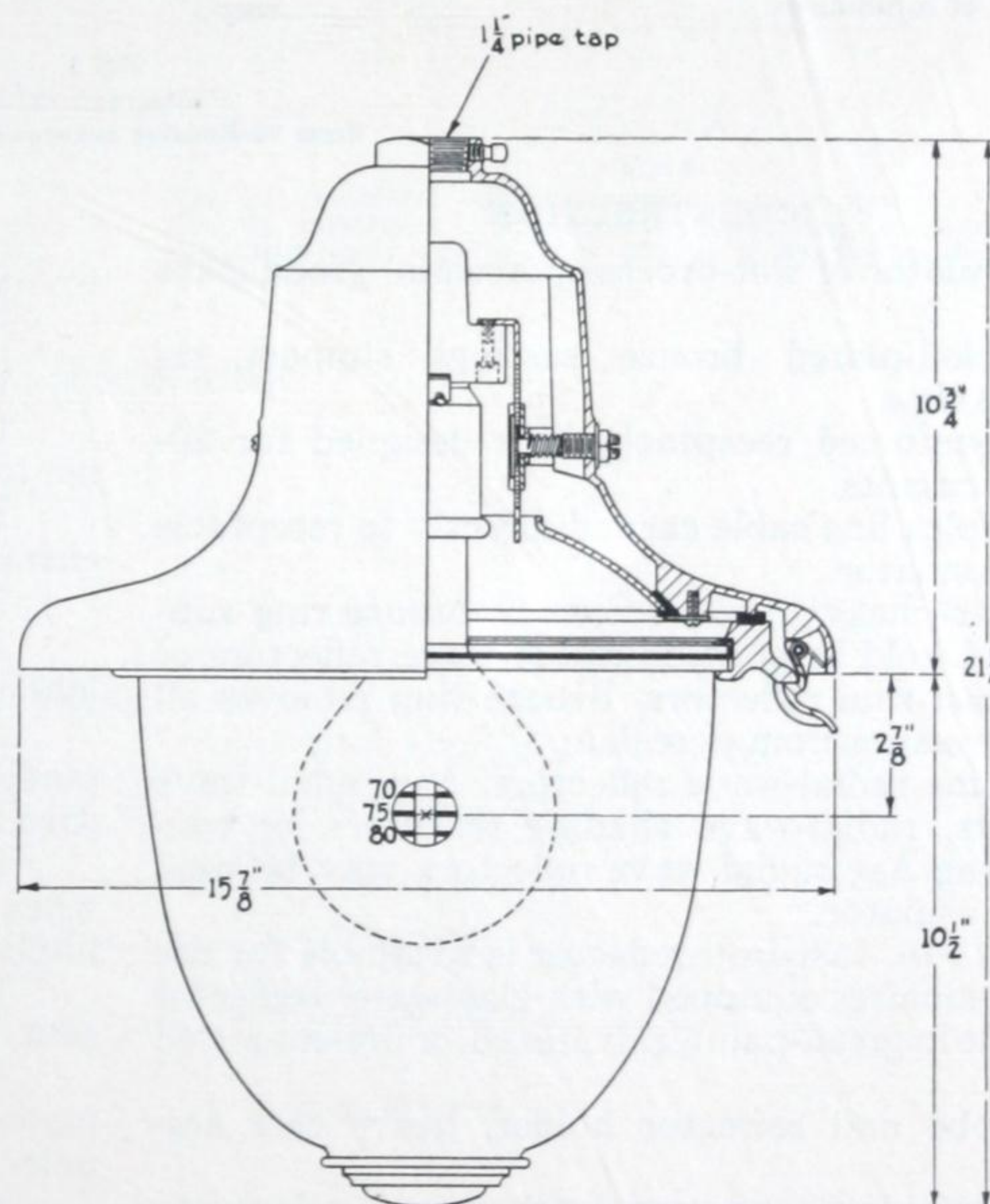


Fig. 4
(T-4815962)

Dimension Form 52 with 11-in. B-Sym-Etric refractor

FORM 72 NOVALUX SUSPENSION LUMINAIRES

For Use on All Series Circuits

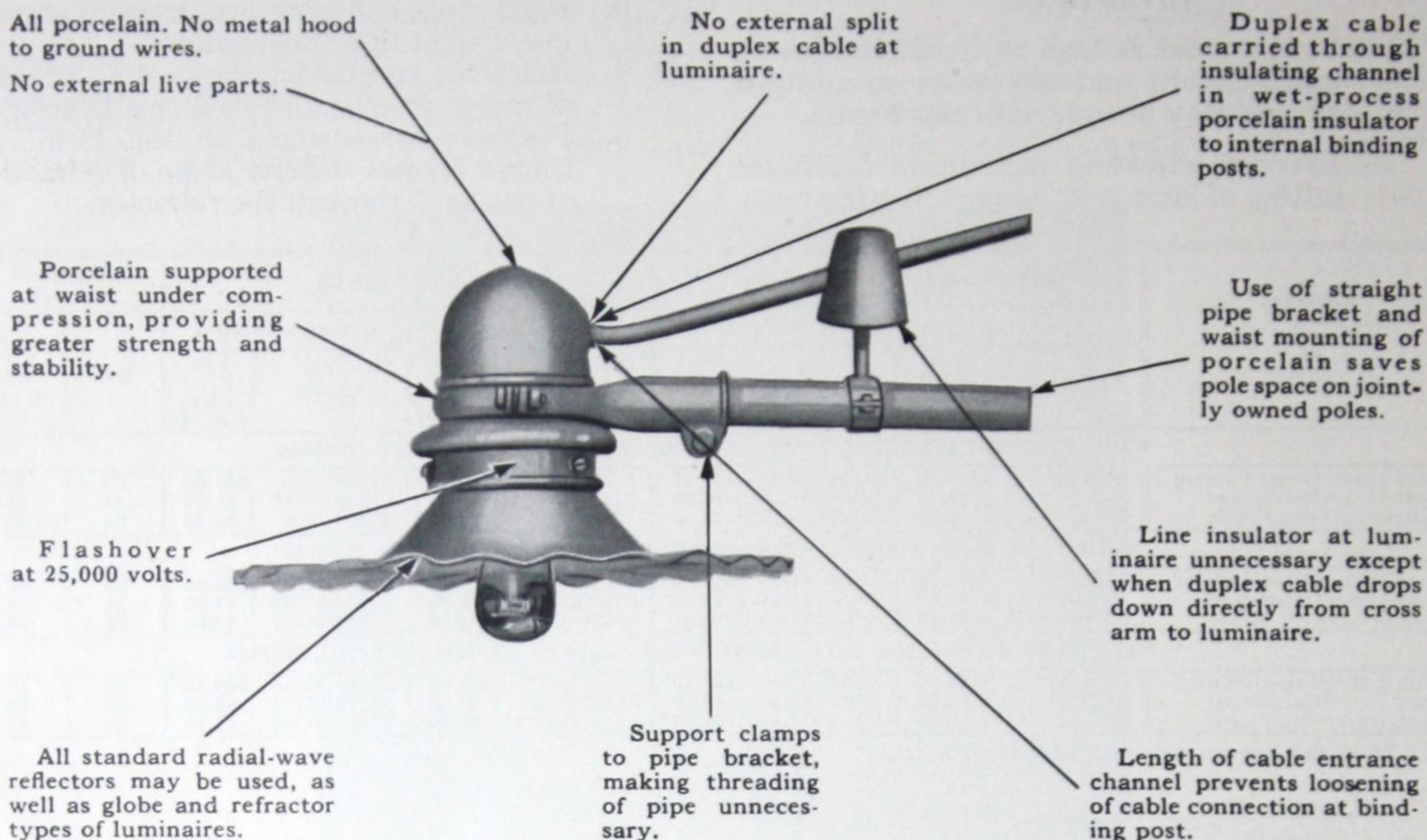


Fig. 1

(Photograph 721286)

Form 72 Novalux suspension luminaire

CONSTRUCTION

Insulator of wet-process porcelain, green glaze finish.

Nickel-plated bronze castings support receptacle clips.

Re-enforced receptacle clips designed for 20-ampere circuits.

Duplex line cable carried directly to receptacle inside insulator.

Three heavy brass screws in bronze ring support and hold in position radial-wave reflectors or 14-in. cast-iron reflectors. Bronze ring removes all radial pressure from porcelain.

Dome radial-wave reflectors, Asy-radial-wave reflectors, radial-wave shading reflectors, or concentrating Asy-radial-wave reflectors may be used on the insulator.

A 14-in. cast-iron reflector is available for use with luminaires equipped with glassware. Reflector available in green-paint, galvanized, or fire-enameled finish.

Globe and refractor holder, heavy cast aluminum.

Rigid hinge and snap latch permit relamping from roadway by means of lamp-picker.

ADVANTAGES

No external live parts.

No external split in duplex cable at luminaires.

No metal hood to ground line wires.

Duplex cable carried through insulating channel to internal binding posts.

Receptacle-clip chamber separate from cable-entrance channel.

Separate receptacle, porcelain eliminated.

Length of cable-entrance channel prevents loosening of cable connection at binding posts.

Flashover to ground occurs at 25 kv inside porcelain, in dry air, from binding post to reflector, then over the outside from reflector screw to bracket.

Eliminates line insulator at luminaire, except when duplex drops down from crossarm directly to luminaire.

Porcelain, supported at waist under compression, provides greater stability.

Use of straight-pipe bracket and waist mounting of porcelain saves pole space on jointly owned poles.

Allows use of all standard radial-wave reflectors, or cast-iron reflector with globe or refractors.

FORM 72 NOVALUX SUSPENSION LUMINAIRES

For Use on All Series Circuits

It is an externally wired luminaire with the advantages of an internally wired one.

Adjustable receptacle position permits use of 5 $\frac{3}{8}$ -in.-light-center lamps in reflectors and 7-in.-light-center lamps in glassware.

Contour of sheet-metal reflectors increases efficiency and strength, and prevents flexing of the metal and consequent chipping of enamel. Copper collar relieves enamel surface of undue strain.

Durability and interchangeability of cast-iron reflector with various glassware combinations

permit assembly of various combinations of luminaires with a few parts, resulting in lower maintenance and inventory.

Nonferrous refractor and globe holders provide dustproof and insectproof support for glassware.

Rigid hinge and snap latch permit relamping from the ground by means of "lamp-picker."

DISADVANTAGES

Cannot be used with low-voltage cables.

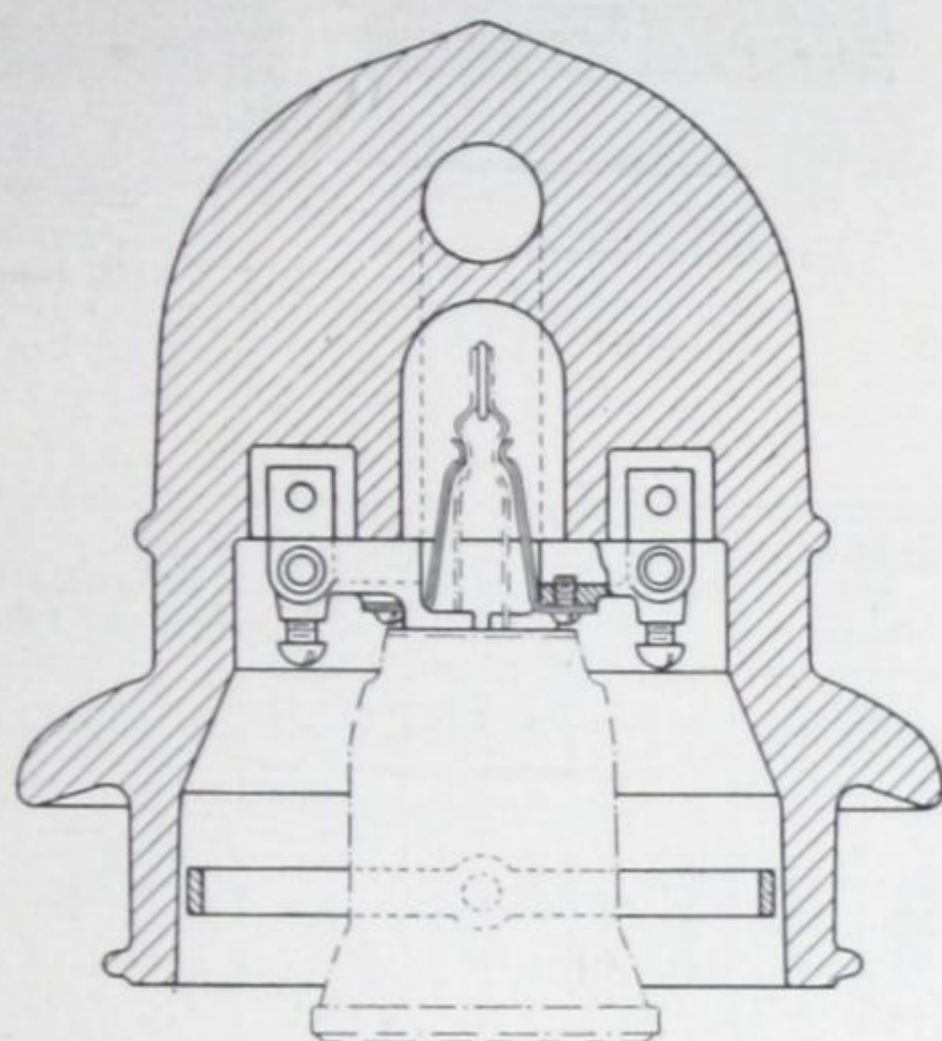


Fig. 2

Cat. No. 4830580G1 painted mounting for 1 $\frac{1}{4}$ -in. pipe.
Cat. No. 4830580G3 hot-dip-galvanized mounting for 1 $\frac{1}{4}$ -in. pipe.
5 $\frac{3}{8}$ -in.-light-center lamp in reflector position.
7-in.-light-center lamp in band-and-bowl refractor position or in deep-dome radial-wave reflector position.

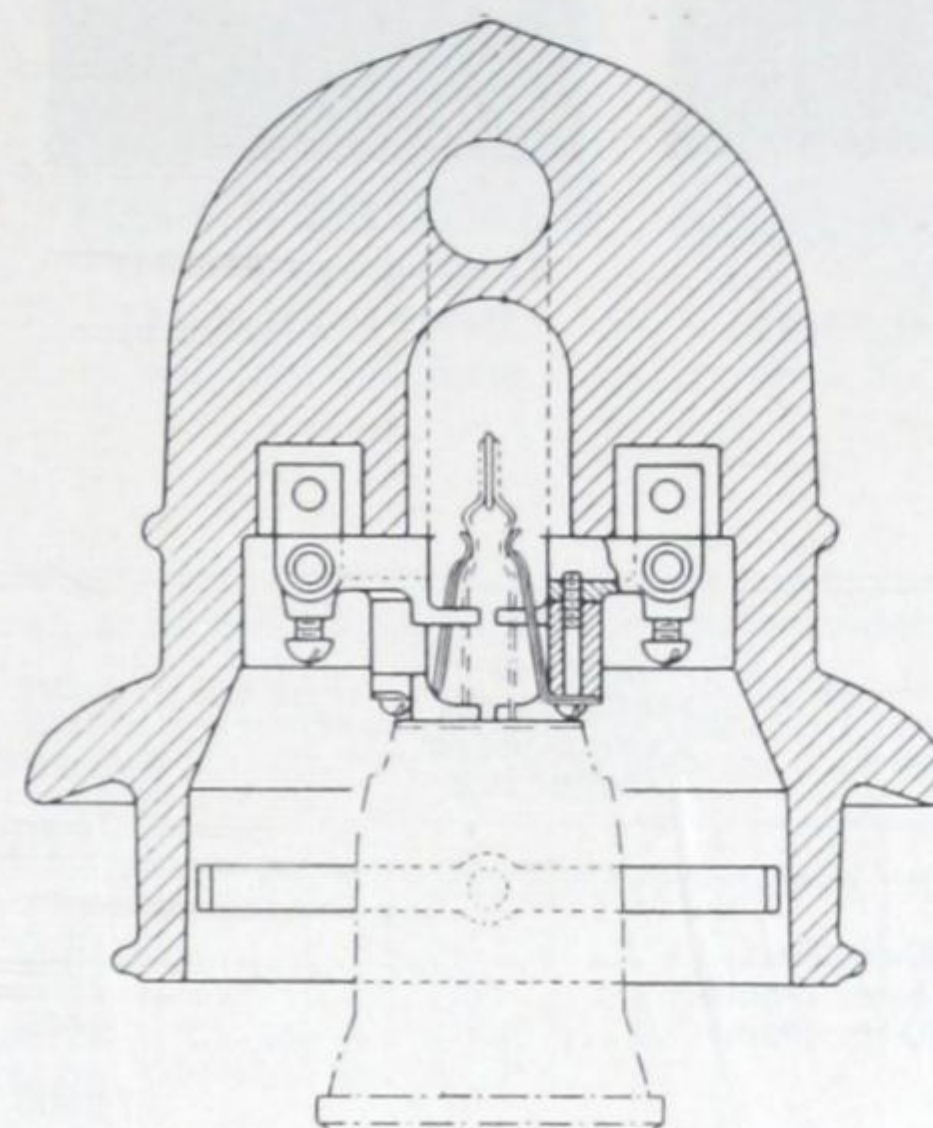


Fig. 3

Cat. No. 4830580G2 painted mounting for 1 $\frac{1}{4}$ -in. pipe.
Cat. No. 4830580G4 hot-dip-galvanized mounting for 1 $\frac{1}{4}$ -in. pipe.
7-in.-light-center lamp in dome refractor or No. 166 and No. 176 globe position.

DIMENSIONS

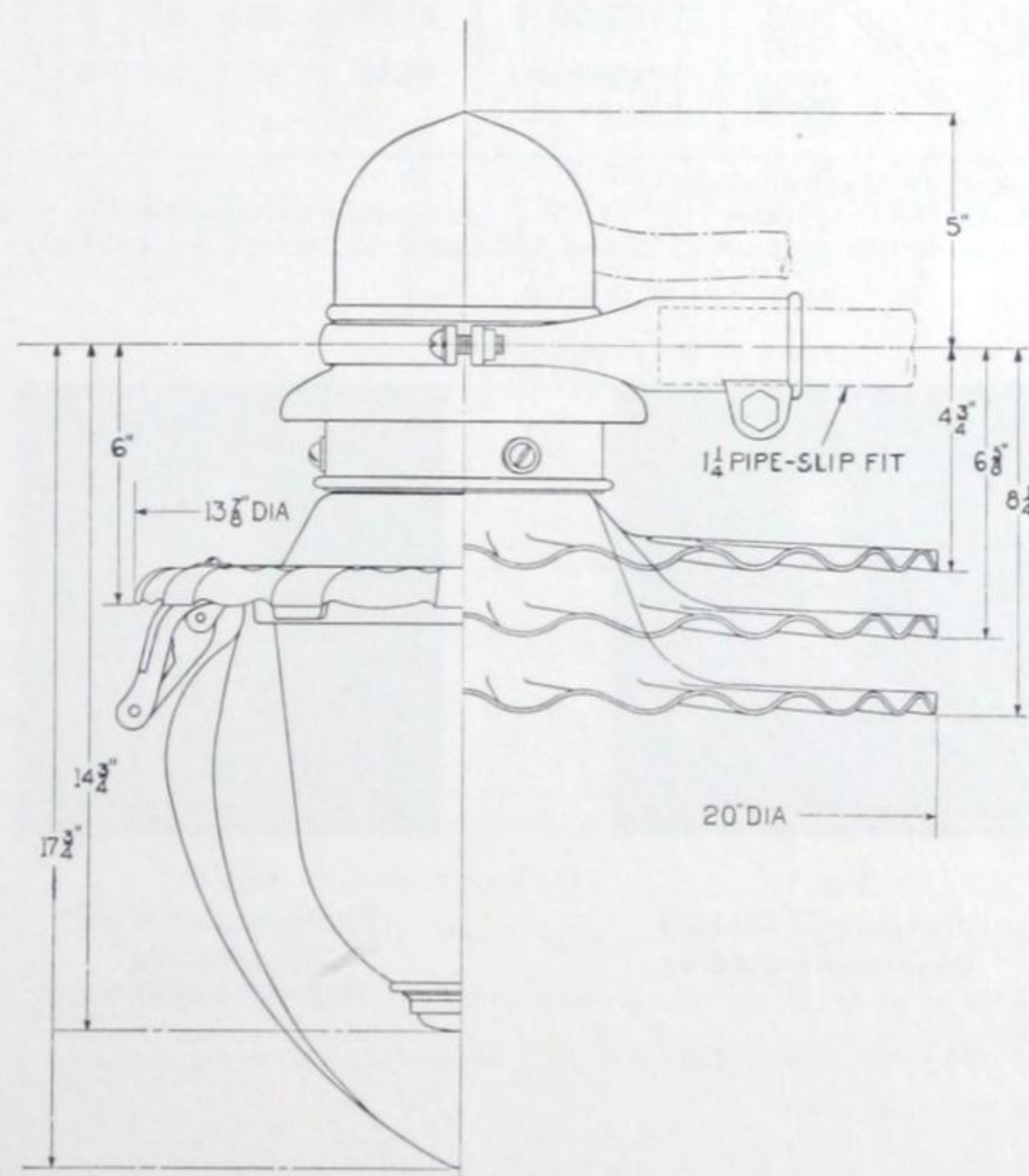


Fig. 4

FORM 72 NOVALUX SUSPENSION LUMINAIRES

For Mounting on 1 $\frac{1}{4}$ -in. Straight-pipe Bracket^o

With Wet-process Porcelain Insulator for Use on all Series Circuits

MOUNTING SUPPORT GALVANIZED, PAINT FINISH AVAILABLE ON REQUEST AT SAME PRICE

WITH RADIAL-WAVE REFLECTORS

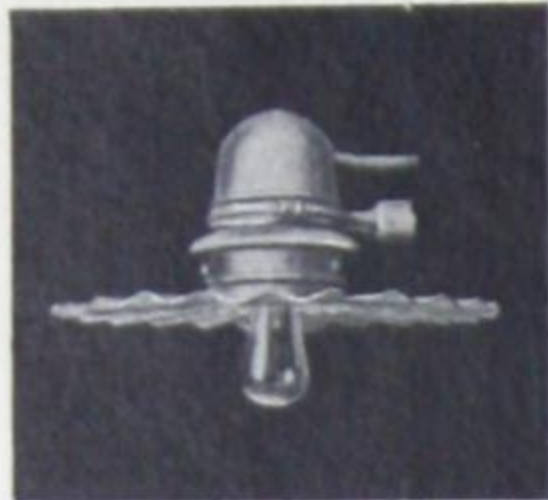


Fig. 1
(Photograph 721153)
Flat radial-wave

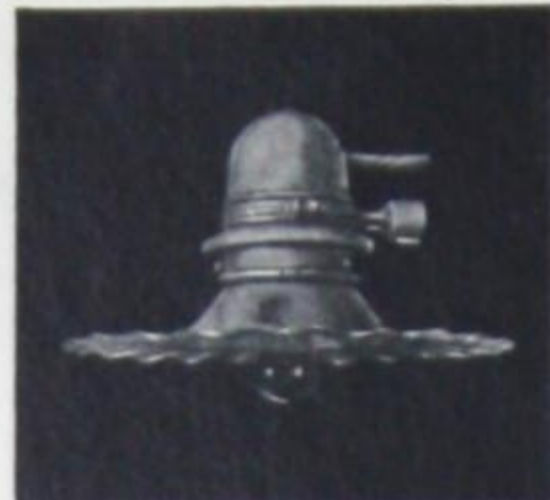


Fig. 2
(Photograph 721154)
Dome radial-wave



Fig. 3
(Photograph 721155)
Deep-dome radial-wave



Fig. 4
(Photograph 721157)
Asy-radial-wave



Fig. 5
(Photograph 721156)
Asy-radial-wave
with long collar

FIG. NO. Complete Luminaire	TYPE OF FIRE-ENAMEL RADIAL-WAVE REFLECTOR	LAMP SIZE LUMENS	* CAT. NO.	* LIST PRICE Class GO-51	APPROX WT IN LB		FIG. NO. OF PARTS †REFER TO PAGES 152 AND 153 FOR ILLUSTRATION, DESCRIPTION, AND PART PRICE											
					Net	Ship.	1	4	5	6	7	8	9	10	11	12	13	14
1	20-in. Flat.....	1000	3791583G2	\$18.65	21	29	B	X	A									
2	18-in. Dome.....	1000	3791583G4	18.65	22	30	B	X		X								
2	20-in. Dome.....	1000	3791583G6	19.15	23	31	B	X			A							
3	20-in. Deep Dome.....	{ 2500 to 6000 }	3791583G8	19.35	24	32	B	X				A						
4	20-in. Asy-radial.....	1000	3791583G10	19.15	23	31	B	X					X					
5	20-in. Asy-radial with Long Collar....	{ 2500 to 6000 }	3791583G12	19.35	23	31	B	X						X				
6	20-in. Dome Shading.....	1000	3791583G14	20.65	23	31	B	X							A			
7	20-in. Deep-dome Shading.....	{ 2500 to 6000 }	3791583G16	20.85	24	32	B	X								X		
8	20-in. Concentrating Asy-radial.....	1000	3791583G18	20.65	23	31	B	X									X	
9	20-in. Concentrating Asy-radial with Long Collar.....	{ 2500 to 6000 }	3791583G20	20.85	23	31	B	X										X

* Catalog numbers and prices do not include MAZDA lamps.

† Fixtures composed of parts indicated by "X" or letter "A" or "B." Letter refers to description under the Fig. No. on page 152 and 153.

^o For mounting on other than mountings shown on pages 152 and 153 apply to nearest Sales Office.



Fig. 6
(Photograph 721161)
Dome shading



Fig. 7
(Photograph 721158)
Deep-dome shading



Fig. 8
(Photograph 721160)
Concentrating
Asy-radial-wave



Fig. 9
(Photograph 721162)
Concentrating
Asy-radial-wave,
Long Collar

FORM 72 NOVALUX SUSPENSION LUMINAIRES

For Mounting on 1 1/4-in. Straight-pipe Bracket^o

With Wet-process Porcelain Insulator for Use on All Series Circuits

MOUNTING SUPPORT GALVANIZED, PAINT FINISH AVAILABLE ON REQUEST AT SAME PRICE

WITH 14-INCH CAST-IRON REFLECTORS

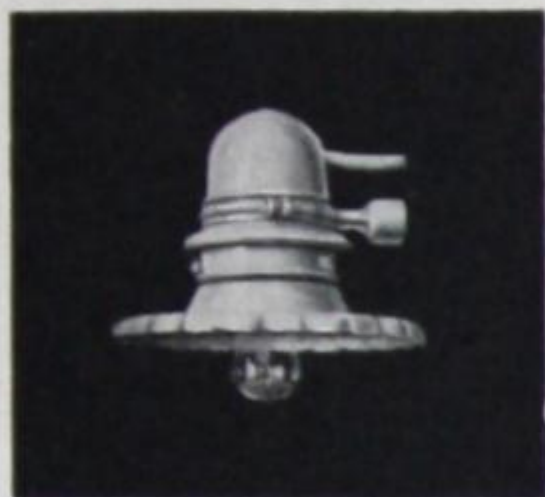


Fig. 10
(Photograph 721163)
Reflector only



Fig. 11
(Photograph 721167)
With band refractor



Fig. 12
(Photograph 721166)
With bowl refractor



Fig. 13
(Photograph 721164)
With No. 166 globe



Fig. 14
(Photograph 721165)
With No. 176 globe

FIG. NO. Com- plete Lumi- naire	† GLOBE	REFRACTOR	□ FINISH OF REFLECTOR	LAMP SIZE— LUMENS	* CAT. NO.	LIST PRICE Class GO-51	APPRX WT IN LB		FIG. NO. OF PARTS †REFER TO PAGES 152 AND 153 FOR ILLUSTRATION, DESCRIPTION, AND PART PRICE													
							Net	Ship.	1	4	15	16	17	18	19	20	21	22	23			
10	.....	.....	{ Galv. Fire Enamel }	1000 { ↑ 2500 to 6000 ↓ }	3791583G22 3791583G23	\$21.45 25.05	27	35	B	X	E											
11	.....	8-in. Band Cat. No. 1327401.....	{ Galv. Fire Enamel }		3791583G25 3791583G26	34.05 37.65	32	43	B	X	B	A			X							
12	.....	SYM-ETRIC Bowl Cat. No. 1340382.....	{ Galv. Fire Enamel }		3791583G28 3791583G29	35.95 39.55	35	46	B	X	B	A					A					
12	.....	B-SYM-ETRIC Rippled Bowl Cat. No. 2346181.....	{ Galv. Fire Enamel }		3791583G31 3791583G32	41.75 45.35	37	50	B	X	B	A					B					
12	.....	Hi-way Rippled Bowl Cat. No. 3775699.....	{ Galv. Fire Enamel }		3791583G34 3791583G35	41.75 45.35	37	50	B	X	B	A					C					
13	166 M.A.R.	.....	{ Galv. Fire Enamel }		3791583G37 3791583G38	30.05 33.65	32	42	D	X	B				X					X		
13	166 L.A.R.	SYM-ETRIC Dome Cat. No. 3775686.....	{ Galv. Fire Enamel }		3791583G40 3791583G41	42.05 45.65	36	50	D	X	B		X	X			A		X			
13	166 L.A.R.	A-SYM-ETRIC Dome Cat. No. 2346021.....	{ Galv. Fire Enamel }		3791583G43 3791583G44	44.55 48.15	36	50	D	X	B		X	X			B		X			
13	166 L.A.R.	B-SYM-ETRIC Dome Cat. No. 2346129.....	{ Galv. Fire Enamel }		3791583G46 3791583G47	44.55 48.15	36	50	D	X	B		X	X			C		X			
14	176 M.A.R.	.....	{ Galv. Fire Enamel }		3791583G49 3791583G50	30.05 33.65	32	42	D	X	B				X					X		
14	176 L.A.R.	SYM-ETRIC Dome Cat. No. 3775686.....	{ Galv. Fire Enamel }	3791583G52 3791583G53	42.05 45.65	36	50	D	X	B		X	X			A		X				
14	176 L.A.R.	A-SYM-ETRIC Dome Cat. No. 2346021.....	{ Galv. Fire Enamel }	3791583G55 3791583G56	44.55 48.15	36	50	D	X	B		X	X			B		X				
14	176 L.A.R.	B-SYM-ETRIC Dome Cat. No. 2346129.....	{ Galv. Fire Enamel }	3791583G58 3791583G59	44.55 48.15	36	50	D	X	B		X	X			C		X				

^o For mounting on other than mountings shown on pages 152 and 153, apply to General Office.

□ Paint finish available at same price as galvanized.

† L.A.R.—Light alabaster rippled; M.A.R.—Medium alabaster rippled.

* Catalog numbers and prices do not include MAZDA lamps.

† Fixtures composed of parts indicated by "X" or letter "A," "B," "C," or "D." Letter refers to description under the Fig. No. on page 152 and 153.

For luminaire with 14-in. cast-aluminum reflector, order similar to above, and use same price as with 14-in. cast-iron reflector, fire-enameled finish.

Luminaire with No. 176 globe may be equipped with light shield, Cat. No. 4830956G1. Add \$1.85 to list price.

FORM 72 NOVALUX SUSPENSION LUMINAIRES

For Use on All Series Circuits

PART INFORMATION

FIG. NO.	DESCRIPTION	FINISH	CAT. NO.	LIST PRICE Class GO-51	SUPERSEDED CAT. NO.
1A	{ Main Insulator with 1 1/4-in. Support without Receptacle Spacers..... }	Green Painted Support	4830580G1	\$12.85	
1B		Galvanized Support	4830580G3	12.85	
1C	{ Main Insulator with 1 1/4-in. Support with Receptacle Spacers..... }	Green Painted Support	4830580G2	12.85	
1D		Galvanized Support	4830580G4	12.85	
2	{ Main Insulator with Span-wire Clamp Support, without Receptacle Spacers }	Green Painted Support	4830580G23	15.60	
		Galvanized Support	4830580G25	15.60	
2	{ Main Insulator with Span-wire Clamp Support, with Receptacle Spacers. }	Green Painted Support	4830580G24	15.60	
		Galvanized Support	4830580G26	15.60	
3	{ Main Insulator with Eye Support, without Receptacle Spacers..... }	Green Painted Support	4830580G17	14.85	
		Galvanized Support	4830580G19	14.85	
3	{ Main Insulator with Eye Support, with Receptacle Spacers..... }	Green Painted Support	4830580G18	14.85	
		Galvanized Support	4830580G20	14.85	
4	Series Socket.....		4815866G1	1.40	25711
5A	20-in. Flat Radial-wave Reflector.....	Fire Enamel	4888496	4.40	46219
5B	20-in. Flat Radial-wave Reflector.....	Alzak Aluminum	4878192	5.00	
6	18-in. Dome Radial-wave Reflector....	Fire Enamel	2383057	4.40	
7A	20-in. Dome Radial-wave Reflector....		2383058	4.90	
7B	20-in. Dome Radial-wave Reflector....	Alzak Aluminum	4878086	5.50	
8A	20-in. Deep-dome Radial-wave Reflector	Fire Enamel	4897140	5.10	
8B	20-in. Deep-dome Radial-wave Reflector	Alzak Aluminum	4878607	5.70	
9	20-in. Asy-radial-wave Reflector, Short Collar.....	Fire Enamel	2393010	4.90	
10	20-in. Asy-radial-wave Reflector, Long Collar.....		3775540	5.10	2393024
11A	20-in. Dome Radial-wave Shading Reflector.....		4884193	6.40	
11B	20-in. Dome Radial-wave Shading Reflector.....	Alzak Aluminum	4881996	7.00	
12	20-in. Deep-dome Radial-wave Shading Reflector.....	Fire Enamel	4884560	6.60	
13	20-in. Concentrating Asy-radial-wave Reflector, Short Collar.....	Fire Enamel	4884190	6.40	
14	20-in. Concentrating Asy-radial-wave Reflector, Long Collar.....	Fire Enamel	4884191	6.60	
15A	14-in. Cast-iron Reflector with Hinge and Latch.....	Green Paint	4830263G4	7.20	3740207G6
15B		Galvanized	4830263G5	7.20	3740207G21
15C		Fire Enamel	4830263G6	10.80	3740207G2
15D	14-in. Cast-iron Reflector without Hinge and Latch.....	Green Paint	4830263G1	7.20	3740207G5
15E		Galvanized	4830263G2	7.20	3740207G20
15F		Fire Enamel	4830263G3	10.80	3740207G1

Fig. 1
(Photograph 722968)Fig. 2
(Photograph 722943)Fig. 3
(Photograph 722967)Fig. 4
(Photograph 720375)Fig. 5
(Photograph 720834)Fig. 6
(Photograph 720797)Fig. 7
(Photograph 720797)Fig. 8
(Photograph 720796)Fig. 9
(Photograph 720795)Fig. 10
(Photograph 720798)Fig. 11
(Photograph 720181)Fig. 12
(Photograph 720799)Fig. 13
(Photograph 720800)Fig. 14
(Photograph 720801)Fig. 15
(Photograph 720802)

FORM 72 NOVALUX SUSPENSION LUMINAIRES

For Use on All Series Circuits

PART INFORMATION (Cont'd)

FIG. NO.	DESCRIPTION	FINISH	CAT. NO.	LIST PRICE Class GO-51	SUPERSEDED CAT. NO.
16A	Band- or Bowl-refractor Holder.....	Natural Aluminum	4830261G1	\$3.00	
16B	Combination bowl refractor and globe holder.....		4830261G2	3.50	
17	Dome-refractor Holder.....		4888001	.50	2378585
18	Globe Holder.....	Natural Aluminum	4815896G1	3.00	
19	8-in. Band Refractor.....		1327401	9.60	
20A	SYM-ETRIC Bowl Refractor.....		1340382	11.50	
20B	B-SYM-ETRIC Rippled-bowl Refractor.....		2346181	17.30	
20C	HI-WAY Rippled-bowl Refractor.....		3775699	17.30	
21A	SYM-ETRIC Dome Refractor.....		3775686	11.50	
21B	A-SYM-ETRIC Dome Refractor.....		2346021	14.00	
21C	B-SYM-ETRIC Dome Refractor.....		2346129	14.00	
22	No. 166 Globe.....			5.60	120
23	No. 176 Globe.....			5.60	
24	Light Shield for No. 176 Globe.....		4830956G1	1.85	



Fig. 16
(Photograph 720829)



Fig. 17
(Photograph 720885)



Fig. 18
(Photograph 720794)



Fig. 19
(Photograph 262252)



Fig. 20
(Photograph 467661)



Fig. 21
(Photograph 467761)



Fig. 22
(Photograph 467761)



Fig. 23
(Photograph 720828)



Fig. 24
(Photograph 721773)

G-E FORMS 79 AND 79R NOVALUX SUSPENSION LUMINAIRE

This luminaire is a radical departure from street-lighting practice as followed for many years. It represents a long step forward in improving visibility with a given light source. It is also scientifically designed to give a utilization efficiency on the roadway from 56 to 60 per cent higher than any comparable type of luminaire on the market.

Tests show conclusively that horizontal intensities on a roadway are not the true criterion of good lighting. The same tests show that for good

visibility the angle of cutoff of the light source must be 10 degrees below the horizontal. This cutoff is provided with the Form 79.

In residence sections, glare from street-lighting luminaires is a problem. The Form 79 definitely removes the light from upper stories and shields the residences from the direct glare. The globe is evenly filled with a soft glareless light which increases visibility over comparable luminaire designs which have areas of extremely high brilliancy.



Fig. 1
(Photograph 723447)
Forms 79 and 79R luminaire,
multiple

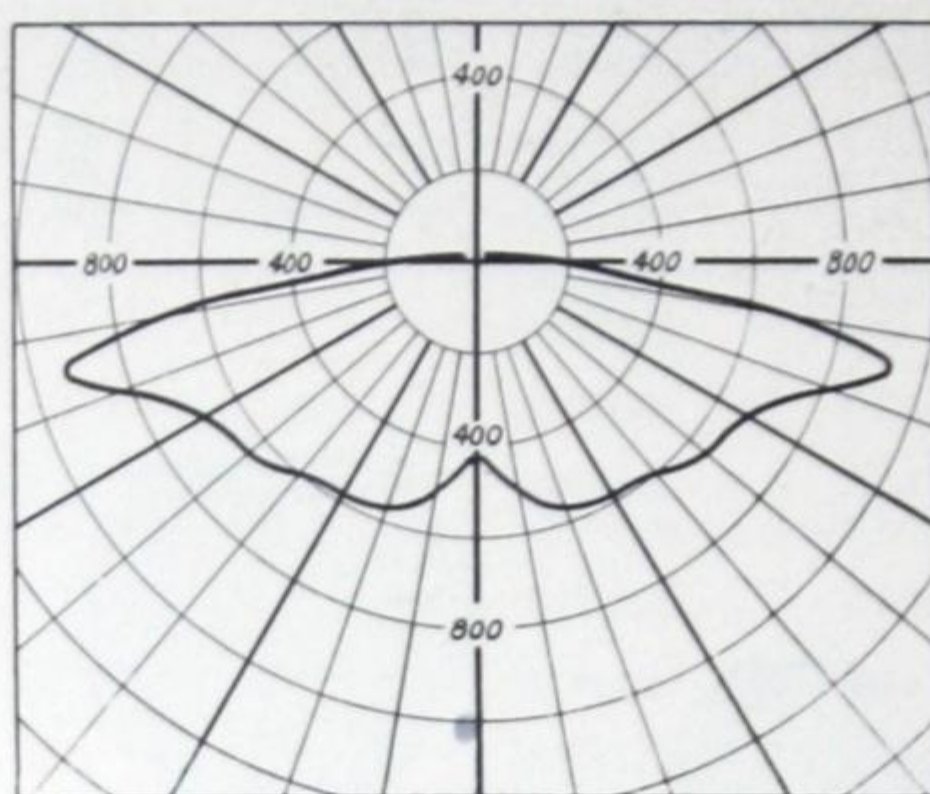


Fig. 2
(H-134358)
Distribution curve in
vertical plane with
300-watt lamp



Fig. 3
(Photograph 723470)
Forms 79 and 79R luminaire,
series

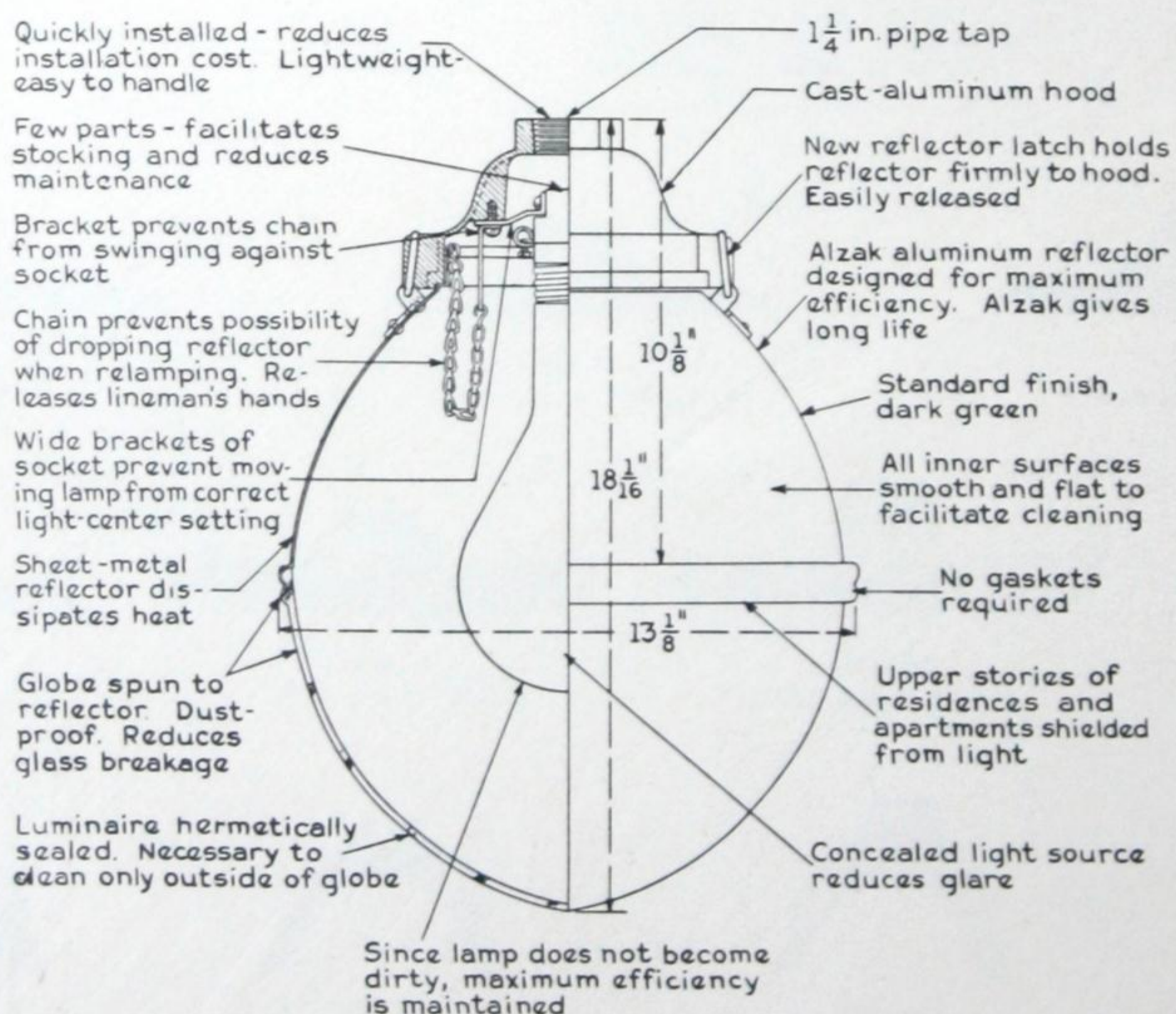


Fig. 4

G-E FORM 79 NOVALUX SUSPENSION LUMINAIRE

WITH NO. 205 CLEAR RIPPLED GLOBE

TYPE OF HOOD	TYPE OF SOCKET	LAMP SIZE		CAT. NO.	LIST PRICE EACH Class GO-51	APPROX WT IN LB	
		Multiple Watts	Series Lumens			Ship.	Net
Shallow	Medium Multiple	200	.....	3791593G3	\$25.90	15	9
Shallow	Mogul Multiple	300 and 500	2500 to 10000	3791593G1	26.10	15	9
Deep	Mogul Multiple	300 and 500	2500 to 10000	3791593G5	27.10	17	11
Deep	Series	.....	2500 to 10000	3791593G7	27.80	17	11

G-E FORM 79R NOVALUX SUSPENSION LUMINAIRE

WITH HOLOPHANE B-WAY RIPPLED REFRACTOR

TYPE OF HOOD	TYPE OF SOCKET	LAMP SIZE		CAT. NO.	LIST PRICE EACH Class GO-51	APPROX WT IN LB	
		Multiple Watts	Series Lumens			Ship.	Net
Shallow	Medium Multiple	200	.....	3791593G14	\$35.10	22	16
Shallow	Mogul Multiple	300 and 500	2500 to 10000	3791593G15	35.30	22	16
Deep	Mogul Multiple	300 and 500	2500 to 10000	3791593G16	36.30	24	18
Deep	Series	.....	2500 to 10000	3791593G17	37.00	24	18

REPLACEMENT PARTS

DESCRIPTION	CAT. NO.	LIST PRICE EACH Class GO-51	APPROX WT IN LB	
			Ship.	Net
Shallow hood, medium multiple socket and chain.....	4865268G2	\$7.30	5	2
Shallow hood, Mogul multiple socket and chain.....	4865268G1	7.50	5	2
Deep hood, Mogul multiple socket and chain.....	4865268G3	8.50	7	4
Deep hood, series socket and receptacle and chain.....	4865268G4	9.20	7	4
Reflector and No. 205 globe only.....	4865269G1	18.60	13	7
Reflector and B-way refractor only.....	4865269G5	27.80	20	14
*Reconditioned reflector and new No. 205 globe in exchange for old reflector....	70X278	7.80	13	7
*Reconditioned reflector and new B-way refractor in exchange for old reflector...	70X279	17.00	20	14

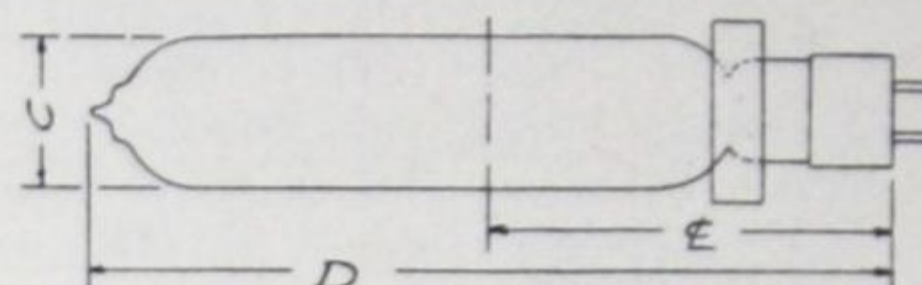
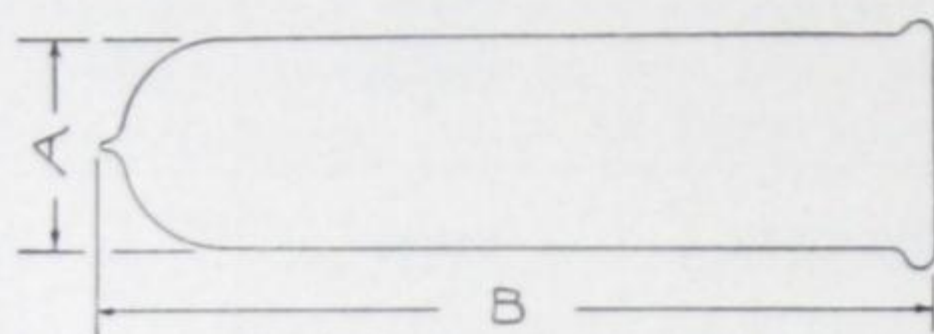
* A reconditioned reflector and new globe or refractor can be purchased at the prices shown, after receipt transportation prepaid, in the nearest G-E warehouse of a reflector, in usable condition, on which the globe or refractor has been broken. Usable condition will be interpreted as any reflector which is not smashed out of shape and which does not have a hole through it.

For High-voltage Series Luminaires, see page 127.

G-E SODIUM LAMPS AND VACUUM FLASKS

Type NA-6, 10,000-lumen

Type NA-9, 10,000-lumen



G-E Vacuum Flask			G-E Sodium Lamp				
Flask No.	"A"	"B"	Type	Lumens	"C"	"D"	Light Center
70-G	4-in.	16 $\frac{5}{8}$ -in.	NA-6	10,000	3-in.	16-in.	9-in.
71-G	4 $\frac{1}{2}$ -in.	17 $\frac{3}{8}$ -in.	NA-9	10,000	3-in.	16-in.	9-in.

SPECIFICATIONS

Lamp symbol	NA-6	NA-9
Service	Gen	Gen
Nominal lumens	10,000	10,000
Approx watts (Lamps only)	200	180
Bulb	T24 (Tipped)	T24 (Tipped)
Burning position	Any	Any
Base	4-pin	4-pin
Nominal Life (Average hours)	2000	2000
No. of cathodes	2	2
Approx cathode amperes	10	6.6
Approx cathode volts (Average at socket terminals)	2.5	2.5
No. of anodes	2	2
Approx arc amp	6.6 (a-c)	6.6 (a-c)
Approx arc volts	28	28
Mean lumens per watt, in per cent of initial (lamp only)	80	80

IMPORTANT NOTES

- (1) These lamps require suitable auxiliary equipment for proper operation on ordinary series or multiple circuits.
- (2) Type NA-9 is a lamp in which the cathodes are connected in series with the arc; so that heating is accomplished by means of the arc current, and separate cathode-heating auxiliary transformers or windings are not required. All luminaires shipped from the factory after April 1, 1935, are arranged for this lamp.
- (3) Type NA-6 lamp is required for all luminaires and control units shipped prior to April 1, 1935. If in doubt, specify catalog number of luminaire when ordering lamps.
- (4) Luminaires designed for Type NA-6 lamps can be converted for Type NA-9 lamps, with improved efficiency. Consult nearest sales office for details, giving catalog number of luminaires involved.
- (5) A 6000-lumen, 5-ampere lamp similar in construction to Type NA-6 and designated as Type NA-8, is obtainable. For further information, consult nearest sales office.
- (6) No. 70-G is a 2-wall flask now furnished with "getter" to improve and maintain the high vacuum required; interchangeable with No. 70. No. 71-G is a 3-wall flask, consisting of a 2-wall vacuum flask with "getter" and with heat baffle inside; intended for exposed-lamp luminaires to give more uniform light output and wattage under the wide variations of temperature and wind velocity encountered.

G-E SODIUM LAMPS AND VACUUM FLASKS

PRICES

Type	Lumens	List Price	Std Pkg Quantity	Use Vacuum Flask No.	List Price	Std Pkg Quantity
NA-6	10,000	\$9.00	4	70-G	\$8.25	4
NA-9	10,000	9.00	4	70-G or 71-G	8.25	4
					9.00	4

TERMS OF SALE

(Abstract of Sales Plan, April 1, 1935)

DISCOUNT SCHEDULE: To consumers purchasing only for their own requirements:*

Quantity	Discount
Less than standard package	None
1 to 9 standard packages	15%
10 or more standard packages	20%

These discounts apply to shipments of the designated quantities at one time to one place.

A standard package consists of four lamps or four vacuum flasks of the same description.

(*) A contractor requiring lamps and vacuum flasks for initial installation in luminaires as part of a contract job may purchase at these discounts.

DELIVERY: Will be f.o.b. point of shipment. Price includes transportation charges (normally freight), excluding cartage, anywhere in domestic territory.

ALWAYS QUOTE LAMPS AND FLASKS SEPARATE from luminaires or other equipment.

PAYMENT OF INVOICES: Shall be made within 30 days from date of invoice. No cash or other discounts allowed.

SALES RESPONSIBILITY: The General Electric Company is responsible for promotion and sale of sodium lamps and equipment for all outdoor lighting applications, notably street- and highway-lighting and floodlighting. Refer all interior lighting propositions to the General Electric Vapor Lamp Company.

ADJUSTMENT: The *average* life expected of sodium lamps in normal street- or highway-lighting service is 2000 hours. Refer all matters relating to adjustments or complaints on sodium lamps sold by the General Electric Company to the nearest District or Local Office engineer for disposition as directed by the Contract Service Department.

TYPE AM-2 G-E NOVALUX SODIUM LUMINAIRE

APPLICATION

For lighting of highways, boulevards, traffic arteries, intersections, traffic circles, grade crossings, underpasses.

Light distribution similar to that of refractor luminaires for incandescent lamps.

Operates from standard a-c multiple or constant-current series circuits.

Uses 10,000-lumen sodium lamp, Type NA-9; and No. 71-G vacuum flask.

Recommended for 25-ft mounting height to light center.

ADVANTAGES

High Efficiency—efficiency of light generation, 40 to 50 lumens per watt; efficiency of luminaire over 80 per cent.

Free from Objectionable Glare—maximum brilliancy low.

Attractive Color—soft, pleasing, restful; attracts favorable attention; practical for identification of traffic routes and danger points.

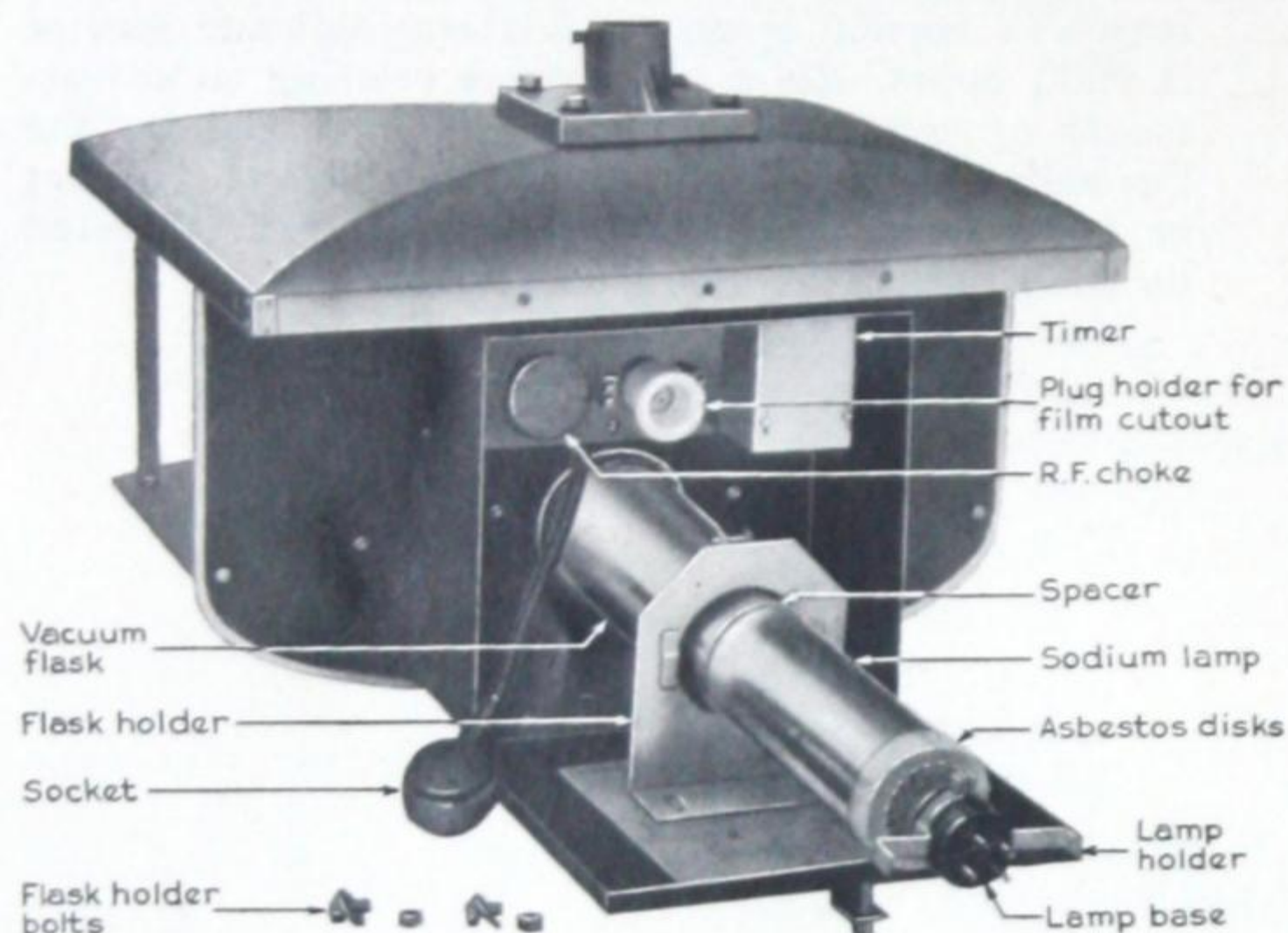


Fig. 2

(Photograph 484393)

Back of series-circuit luminaire, with sodium lamp and vacuum flask withdrawn

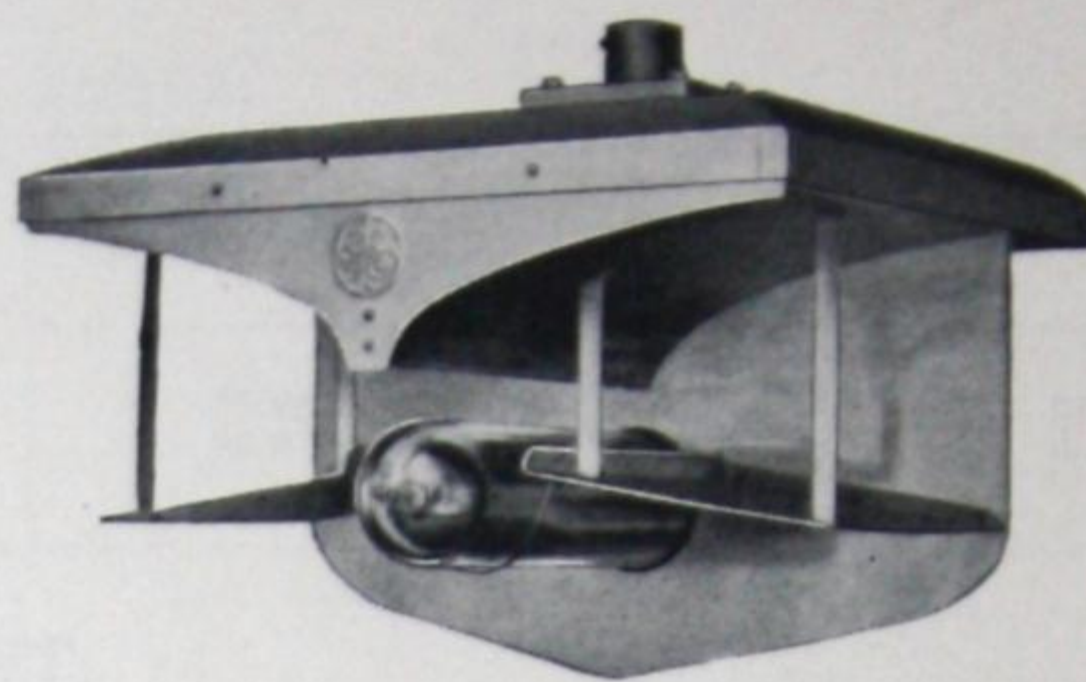


Fig. 1

(Photograph 722987)

Type AM-2 sodium luminaire

Easy to Install and Operate—designed for conventional lighting circuits and methods of wiring; lamps and auxiliaries easily accessible.

New—latest and very effective highway luminaire; invaluable for promotional installations because of widespread interest and distinctive characteristics.

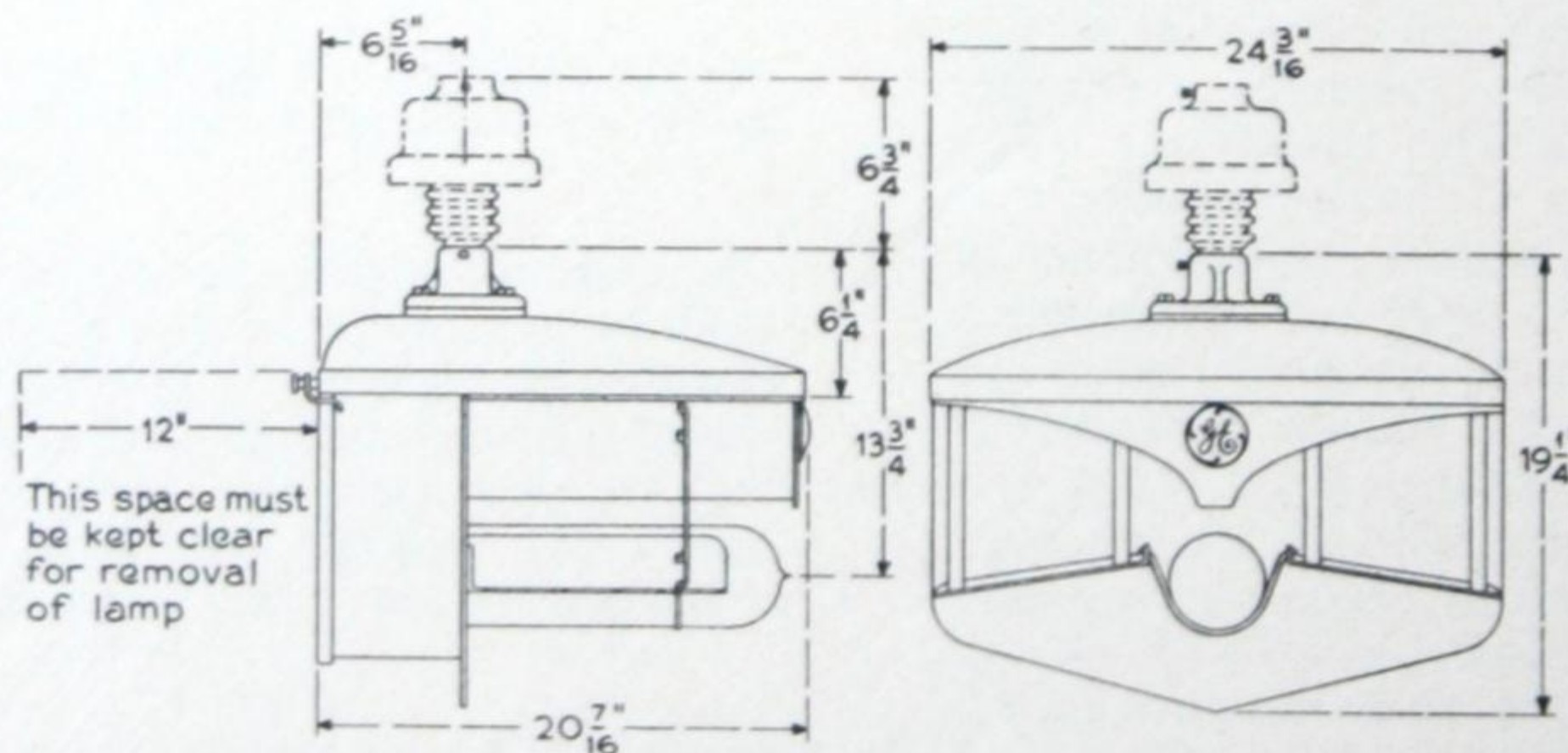
Reliable—designs proved by two years' practical field experience; more than 100 purchasers now using.

CONSTRUCTION

Reflectors—Alzak aluminum, parabolic and plane sections, designed especially for the sodium lamp.

Equipment Housing—contains jack-mounted cathode-preheating timer, lamp and flask holders, lamp connector (socket), radio-interference suppressor. Series luminaire also contains film-cutout holder. Multiple luminaire has reactive transformer and fused cutout—everything needed to operate the lamp successfully. Has door for easy access. Lamp, vacuum flask, and timer are securely held but easily removable.

Mounting— $1\frac{1}{4}$ -in. pipe-tapped fitting, for any standard rigid bracket or mast arm. Internally wired. (Cable inlet Cat. No. 4830380P1 may be added if required.)



(P-4865171)

(P-4865172—with Insulator)

Fig. 3

Dimensions

TYPE AM-2 G-E NOVALUX SODIUM LUMINAIRE

Type IL Transformers—used for insulation from series-circuit voltage, and for current transformation to 6.6 amperes secondary where necessary. Available in any standard form.

Insulator—for straight-series operation from 6.6-amp circuits; heavy-duty wet-process porcelain for wiring through.

PRICES

TYPE AM-2 NOVALUX SODIUM LUMINAIRES

Type	Model No.	Net Price	APPROX WT IN LB		Use Sodium Lamp Type	Use Vacuum Flask No.	Use Film Cutout Cat. No.	OPERATING DATA (APPROX FOR 60-CYCLE UNIT)		
			Net	Ship.				Volts	Amp	Watts
IL transformer type	2AM2TD1	\$60.50	40	55	NA-9, 10,000-lumen	71-G	4815920G3	35.1	6.6	220
Straight-series type with insulator (6.6 amp only)	2AM2SD1	55.50	45	60	NA-9, 10,000-lumen	71-G	4815920G3	31.4	6.6	195
Multiple-circuit type	2AM2ME1	60.50	50	60	NA-9, 10,000-lumen	71-G	.....	115	5.2	255

- NOTES: (a) Prices and catalog numbers do not include lamps or vacuum flasks.
 (b) Price of Model No. 2AM2TD1 includes price of Type IL transformer listed below.
 (c) List luminaires, transformers, lamps, and vacuum flasks as separate items when ordering.
 (d) Price of luminaire and transformer is quoted f.o.b. point of shipment, including prepaid freight to any freight station in domestic territory. The method and route of shipment are to be left to the discretion of the General Electric Company.
 (e) For 50- or 25-cycle equipment, use 60-cycle prices.
 (f) Straight-series luminaire is available for 6.6-ampere circuits only, conforming to lamp current rating.
CAUTION: This luminaire must not be serviced while the circuit is energized unless a disconnecting cutout is used.
 (g) Photometric data: Curve sheets H-134337, H-134338.
 Connection diagrams: IL transformer type: K-4865411
 Straight-series type: K-4867429
 Multiple-circuit type: K-4867399

NOVALUX TYPE IL TRANSFORMERS FOR SODIUM LUMINAIRES

CAT. NO.		Net Price	APPROX WT IN LB		For Use with Novalux Sodium Luminaire Model No.
Wiping-sleeve	Aerial-type		Net	Ship.	
3201054	3201053	Included in price of luminaire	28	30	2AM2TD1 with 10,000-lumen lamp

- NOTES: (a) For transformer with 7.5- or 20-ampere primary, use 6.6-ampere prices.
 (b) These transformers have 6.6-ampere secondary. Standard transformers with 15- or 20-ampere secondaries can *not* be substituted.
 (c) Dimensions of aerial-type transformer same as Cat. No. 4X563 standard transformer (K-1257442); those of wiping-sleeve transformer, same as Cat. No. 4X569 (K-1257439).

CAPACITY TABLE FOR TYPE RO NOVALUX CONSTANT-CURRENT TRANSFORMERS

Kw Rating	10,000-lumen Units with IL Transformers	10,000-lumen 6.6-amp Straight-series Units	Kw Rating	10,000-lumen Units with IL Transformers	10,000-lumen 6.6-amp Straight-series Units
3	9	10	15	46	53
5	15	18	20	61	71
7.5	23	27	25	77	89
10	30	35	30	92	107

NOTE: This table takes into account the load power-factor, starting requirements, aging of lamps, normal variations of supply voltage and frequency, and ohmic and reactive losses in the usual highway-lighting circuit.

G-E HIGH-INTENSITY MERCURY LAMPS AND NOVALUX LUMINAIRES



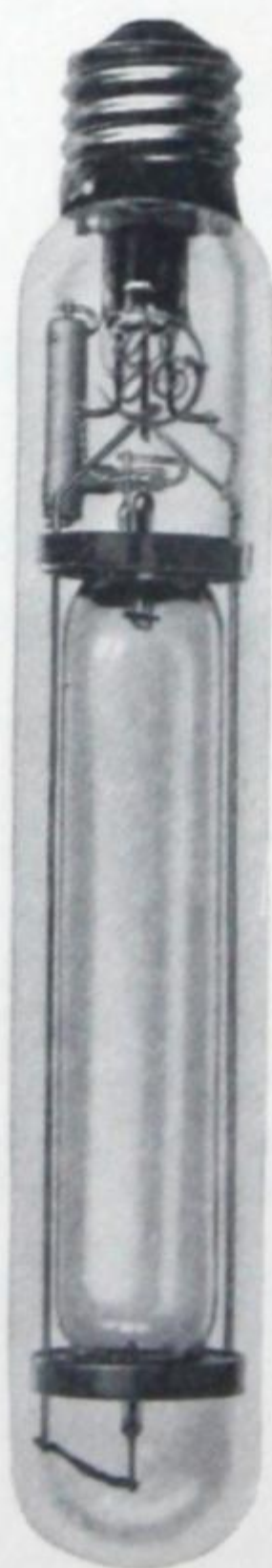
G-E high-intensity mercury-incandescent street-lighting luminaire

An attractive color and a larger volume of light for the energy consumed are features of the General Electric high-intensity mercury lamps.

Two sizes are available—the 400-watt Type H-1 lamp generating approximately 16,000 lumens, and the 250-watt Type H-2 lamp generating approximately 7500 lumens. These may be used for street

lighting either alone or in combination with MAZDA incandescent lamps. Suitable luminaires and transformers for multiple circuit operation are available.

For further details, consult the nearest General Electric sales office, or write General Electric, Schenectady, New York.



G-E high-intensity mercury-vapor lamp, 400 watts

FORM 54 G-E NOVALUX OUTDOOR SUBSTATION LUMINAIRE

For Use on Multiple Circuit

The growing interest of central station managements in lighting their outdoor substations necessitated bringing out a design of unit which would meet the demand to the best advantage. The Form 54 Novalux outdoor-substation luminaire will meet the varying requirements in the field. The unit is excellent in appearance. It permits the use of lamps rated as high as 500 watts.

on a felt gasket and is held securely in place by a phosphor-bronze encircling wire which supplies constant pressure, making an insect-tight and weatherproof joint between casing and globe. The unit is equipped with a silvered glass reflector designed to give a distribution similar to that of the General Electric Sym-Etric refractor. The reflector is a special design for the substation luminaire



Fig. 1
(Photograph 476747)
Form 54 Novalux substation luminaire

MECHANICAL CONSTRUCTION

The Form 54 is very strongly and suitably constructed for this particular application, and, as a matter of fact, for any application where an inverted unit of high efficiency is required. The casing may be furnished in either cast aluminum, natural finish or cast iron, painted, galvanized, or natural finish. It is tapped for 1 $\frac{1}{4}$ -in. pipe and is equipped with drain holes so that any condensate in the unit will drain out. The globe holder, which is a very important feature of this unit, is cast iron or aluminum, whichever is desired. The hinge and means of fastening to the casing are completely shielded so that no moisture, snow, or water which would freeze in cold weather can enter between the casing and the holder. This facilitates relamping. This is a very desirable feature, especially if the units are installed in parts of the country where cold weather is encountered. The globe rests

and provides the most efficient utilization of light. The unit has a fixed focus with light center in the focal point of the reflector.

ADVANTAGES

1. Globe holder will not freeze, thereby permitting relamping in any emergency in any weather.
2. Excellent external appearance, which blends well with substation structures.
3. Lamps rated as high as 500 watts may be used in this unit.
4. High utilization of light due to special-design silvered glass reflector.
5. Alabaster rippled globe creates large secondary light source, thereby reducing glare, particularly to workmen on substation structure.

FORM 54 G-E NOVALUX OUTDOOR SUBSTATION LUMINAIRE

For Use with 300- and 500-watt Lamps on Multiple Circuits

WITH NO. 166 LIGHT ALABASTER RIPPLED GLOBE

MATERIAL AND FINISH OF CASING	* CAT. NO.	* LIST PRICE Class GO-51	APPROX WT IN LB	
			Net	Ship.
Cast iron—green painted	55X300	\$33.00	14	29
Cast iron—galvanized	55X301	33.00	14	29
Aluminum—no finish	55X302	40.50	6	21

* Cat. No. and prices do not include MAZDA lamp.

Do not deduct "Renewal Part" prices for omission of glassware from any of the above luminaires. Request quotation.

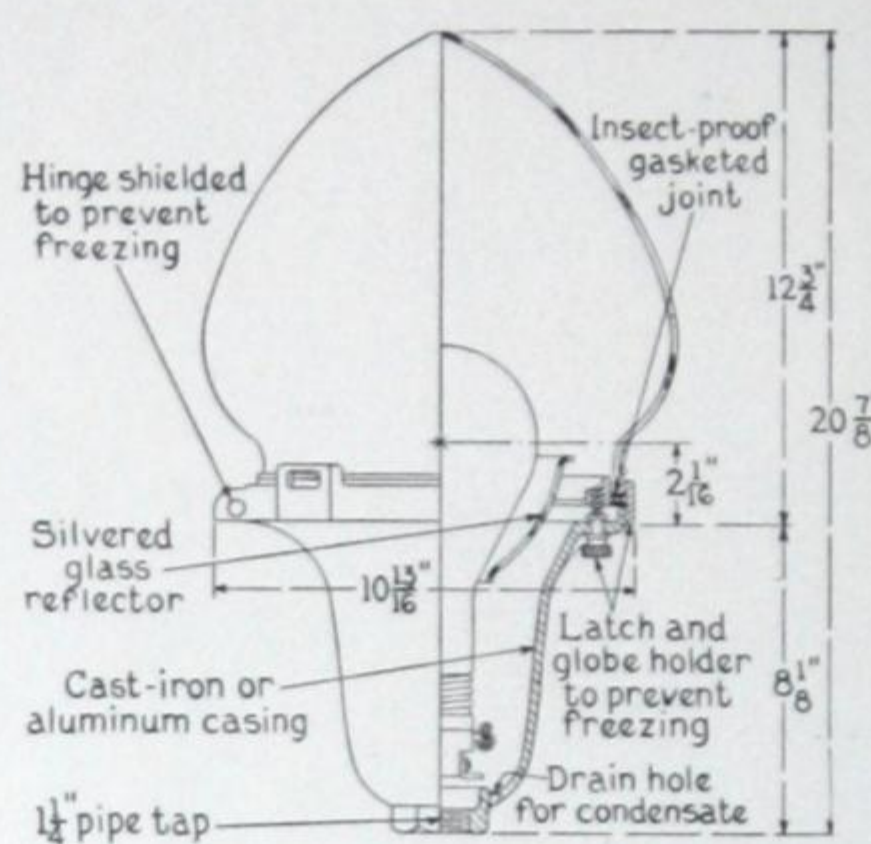


Fig. 2
Dimensions

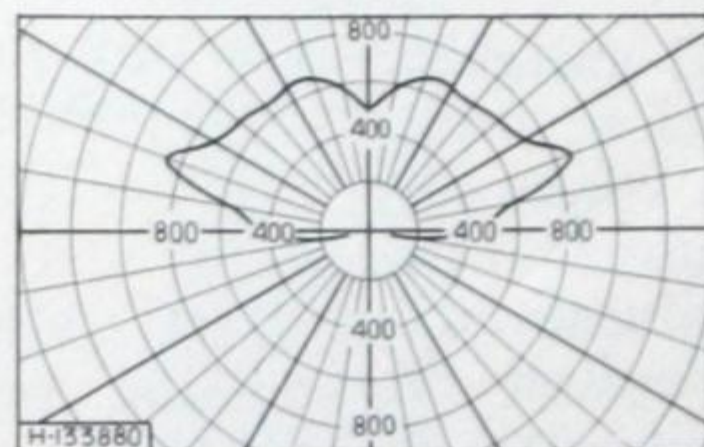


Fig. 3
Distribution with 300-watt lamp

G-E NOVALUX BRACKETS

For Novalux Suspension Luminaires

CONSTRUCTION

Pipe is made of steel and not conduit, to give added strength.

Pipe ends are removed to prevent abrasion of wires.

Pipe is galvanized, after threads are cut, to protect against rusting.

Scrolls have round edges so that the hands and gloves of linemen will not be cut.

Angle of bracket with pole is adjustable on bishop's-crook, right-angle-bend, and straight-pipe brackets to correct for the rake of the poles.

Pole plates are of malleable iron for maximum strength.

The back of the pole plate is enclosed to prevent water from running into the pipe.

1½-in. brackets are available with either 2- or 3-pole plates.

Painted brackets are finished in dark green.

Scroll clamps and set-screws are galvanized.

On painted brackets, clamps are painted over galvanizing.

SPECIAL FEATURES

Drop-forged scroll clamps can be furnished if specified. Add to list price for each clamp \$0.70 on 1½-in. brackets and \$0.60 on 2-in. brackets.

Special pole plates can be furnished. Refer to page of parts for descriptions and prices.

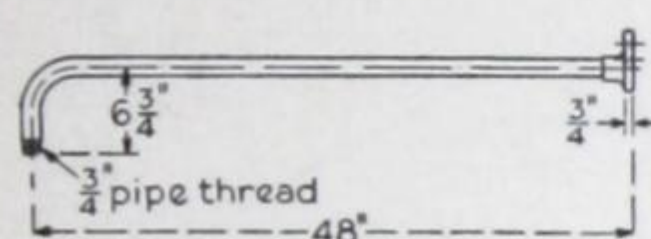


Fig. 1
(K-4867555)

Right-angle-bend bracket

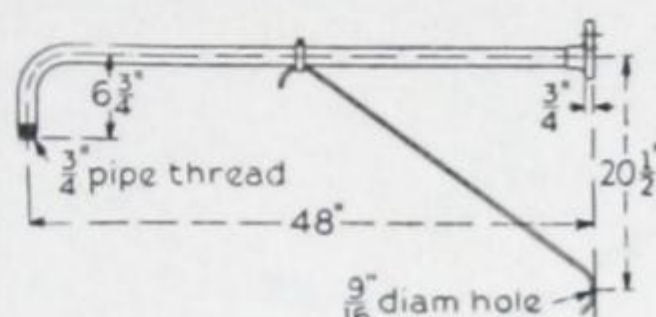


Fig. 2
(K-4867556)

Right-angle-bend bracket
with brace

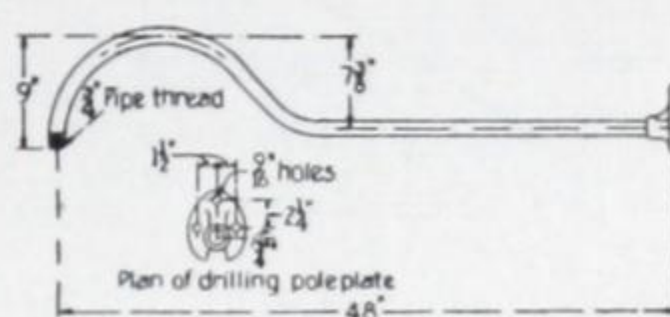


Fig. 3

Goose-neck bracket

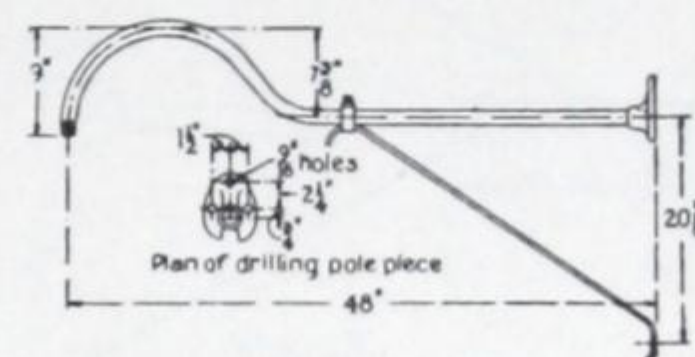


Fig. 4

(K-3758106)

Goose-neck bracket
with brace

FIG. NO. COMPLETE BRACKET	PIPE DIAM in In.	BRACKET LENGTH in In.	DESCRIPTION	FINISH	CAT. NO.	LIST PRICE Class GO-51	APPROX WT IN LB		PART REFERENCE NUMBER Refer to Page 166 for Description and Part Price						
							Net	Ship.	1	2	3	4	5	6	7
1	¾	48	Right-angle-bend..... {	Paint Galv.	1229475G87 1229475G88	\$4.05 4.50	7 7	8 8	A B	S T					
2	¾	48	Right-angle-bend with brace..... {	Paint Galv.	1229475G89 1229475G90	5.55 6.25	10 10	11 11	A B	S T	A B	A B			
3	¾	48	Goose-neck..... {	Paint Galv.	1229475G22 1229475G21	4.05 4.50	7 7	8 8	A B	A B					
3	¾	48	Goose-neck with 1 ¼-in. adapter.... {	Paint Galv.	1229475G40 1229475G39	4.05 4.50	7 7	8 8	A B	A B			A B		
4	¾	48	Goose-neck with brace..... {	Paint Galv.	1229475G20 1229475G19	5.55 6.25	10 10	11 11	A B	A B	A B	A B			
4	¾	48	Goose-neck with brace and 1 ¼-in. { adapter..... {	Paint Galv.	1229475G38 1229475G37	5.55 6.25	10 10	11 11	A B	A B	A B	A B	A B		

G-E NOVALUX BRACKETS

For Novalux Suspension Luminaires

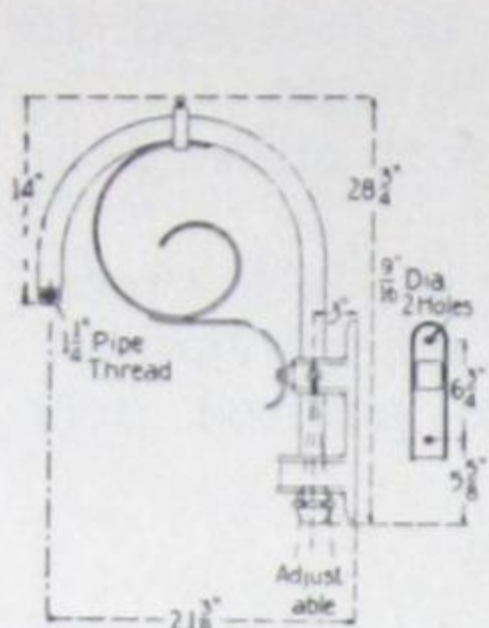


Fig. 5
Bishop's-crook
bracket

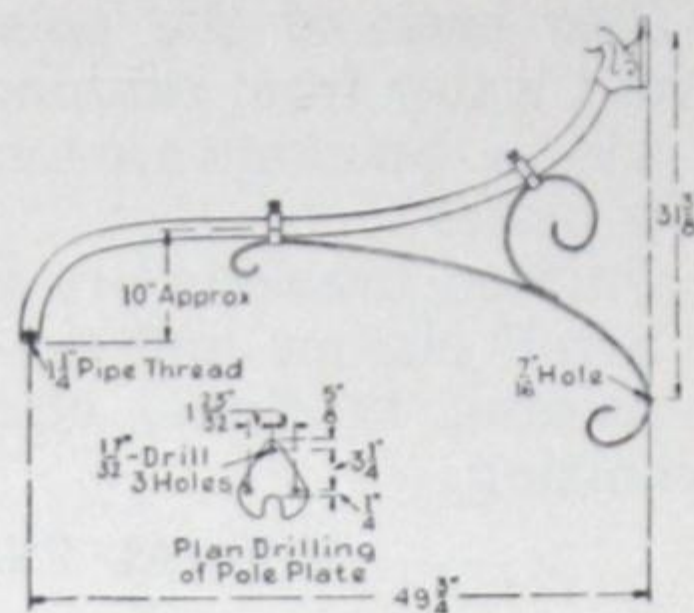


Fig. 6
(Photograph 280427)
Double-bend bracket

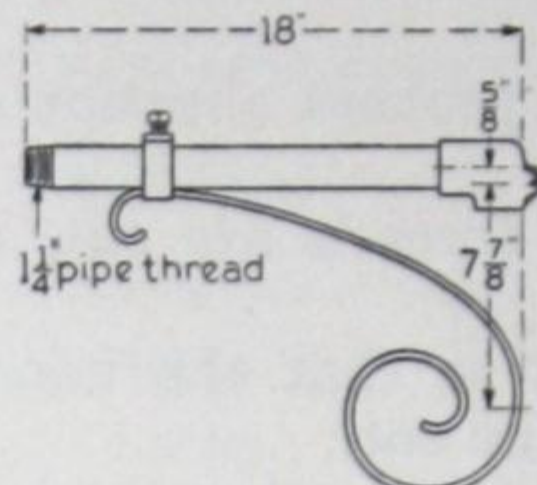


Fig. 7
(K-3758181)
20-in. straight-pipe bracket

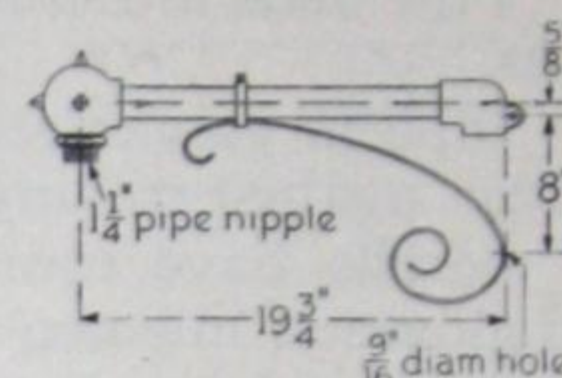


Fig. 8
(K-4867557)
20-in. right-angle-joint
bracket

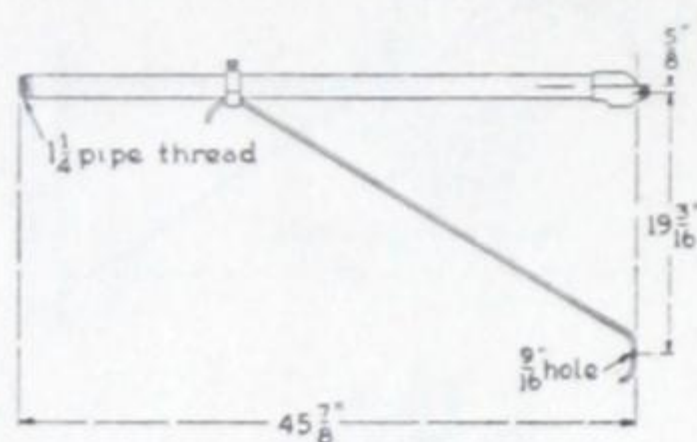


Fig. 9
Straight-pipe bracket

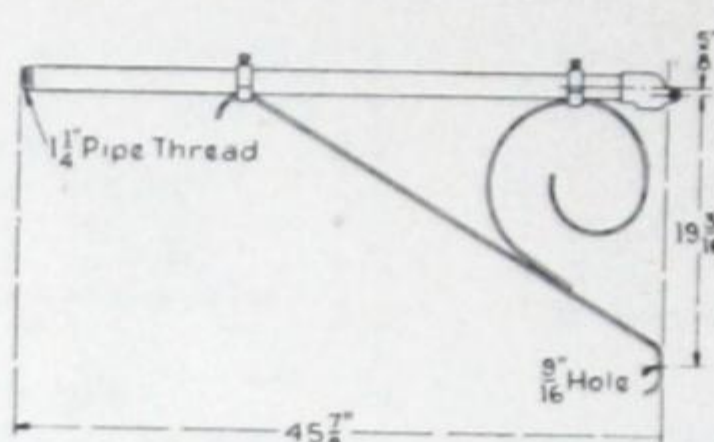


Fig. 10
(Photograph 279844)
Straight-pipe bracket

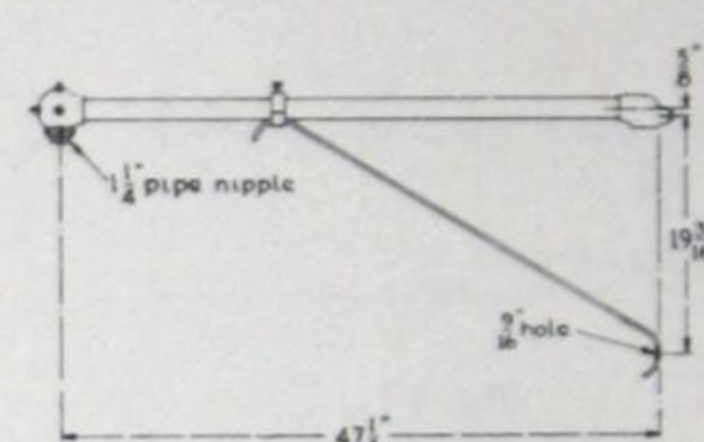


Fig. 11
(K-4802833)
Right-angle-joint
bracket

FIG. NO. COMPLETE BRACKET	PIPE DIAM in In.	BRACKET LENGTH in In.	DESCRIPTION	FINISH	CAT. NO.	LIST PRICE Class GO-51	APPROX WT IN LB		PART REFERENCE NUMBER Refer to Page 166 for Description and Part Price							
							Net	Ship.	1	2	3	4	6	7	8	
5	1 1/4	21 3/8	Bishop's-crook..... {	Paint Galv.	1229475G15 1229475G16	\$10.85 12.10			C D	E F	E F	C D	A B	A A		
6	1 1/4	49 3/4	Double-bend..... {	Paint Galv.	1229475G9 1229475G10	10.45 11.65	24 24	26 26	E F	G H	G H	*C *D				
7	1 1/4	20	Straight-pipe with bracket..... {	Paint Galv.	1229475G5 1229475G6	4.70 5.25	12 12	15 15	G H	C D	C D	C D				
8	1 1/4	20	Right-angle-joint with brace..... {	Paint Galv.	1229475G91 1229475G92	6.70 7.25	13 13	16 16	G H	C D	C D	C D			A B	
9	1 1/4	45 7/8	Straight-pipe with brace..... {	Paint Galv.	1229475G30 1229475G31	5.90 6.45	18 18	20 20	G H	K L	O P	C D				
10	1 1/4	45 7/8	Straight-pipe with scroll..... {	Paint Galv.	1229475G1 1229475G2	7.75 8.55	20 20	22 22	G H	K L	I J	*C *D				
10	1 1/4	45 7/8	Straight-pipe with scroll. No thread on end of pipe..... {	Paint Galv.	1229475G93 1229475G94	7.75 8.55	20 20	22 22	G H	Q R	I J	*C *D				
10	1 1/4	45 7/8	Straight-pipe with scroll and 3-hole pole plate..... {	Paint Galv.	1229475G78 1229475G43	7.75 8.55	20 20	22 22	I J	K L	I J	*C *D				
10	1 1/4	45 7/8	Straight-pipe with scroll and 3-hole pole plate, no thread on end of pipe {	Paint Galv.	1229475G95 1229475G42	7.75 8.55	20 20	22 22	I J	Q R	I J	*C *D				
11	1 1/4	47 1/4	Right-angle-joint with brace..... {	Paint Galv.	1229475G34 1229475G35	7.90 8.45	20 20	22 22	G H	K L	O P	C D			A B	

* Two clamps required.

G-E NOVALUX BRACKETS For Novalux Suspension Luminaires

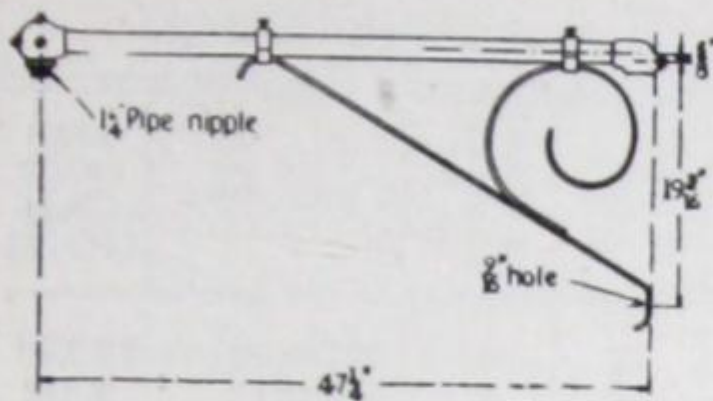


Fig. 12
Right-angle-joint
bracket

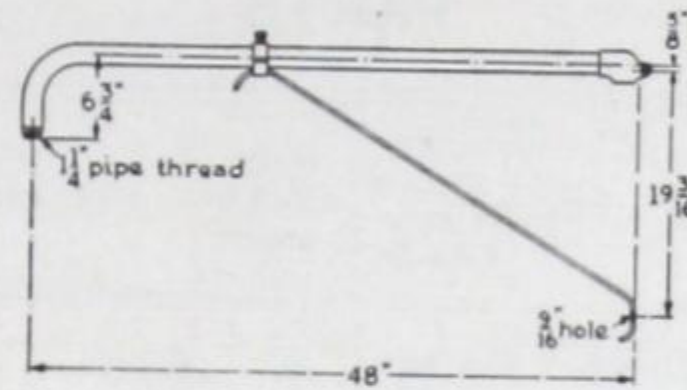


Fig. 13
(Photograph 721392)
Right-angle-bend
bracket

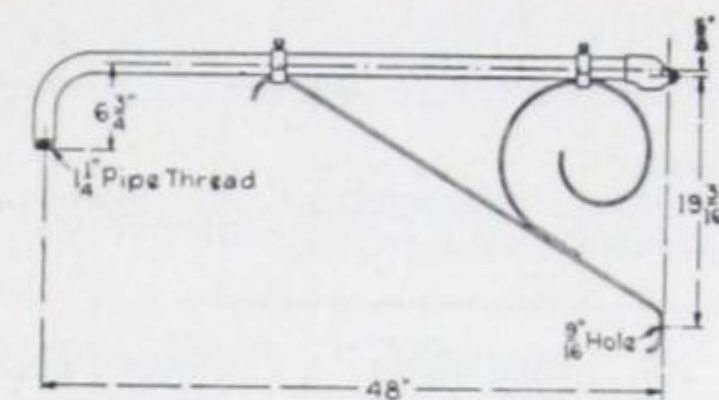


Fig. 14
(Photograph 279828)
Right-angle-bend
bracket

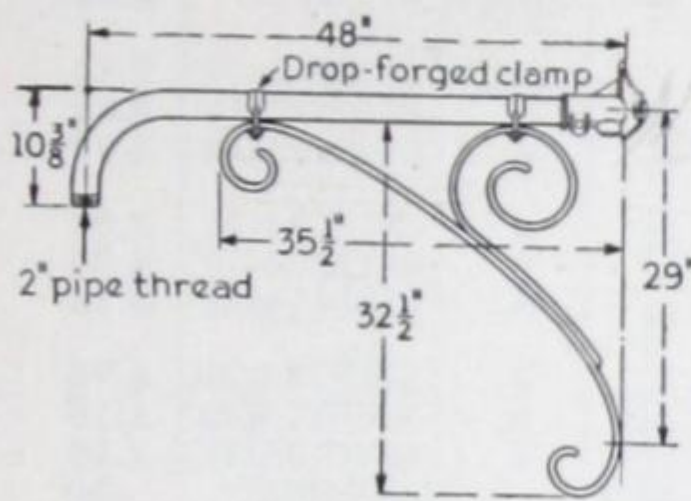


Fig. 15
Right-angle-bend
2-in. bracket

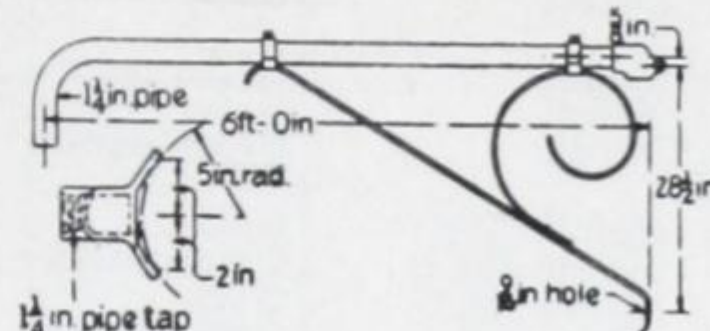


Fig. 16
6-ft right-angle-bend
bracket

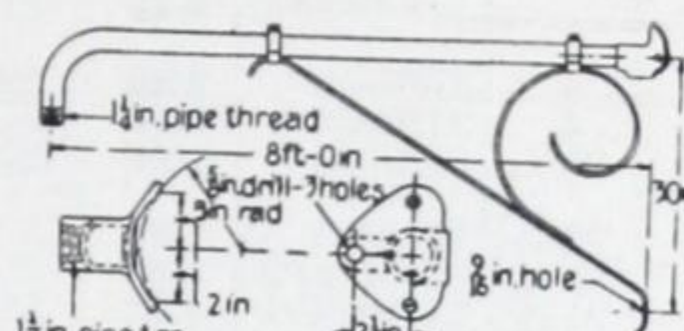


Fig. 17
8-ft right-angle-bend
bracket

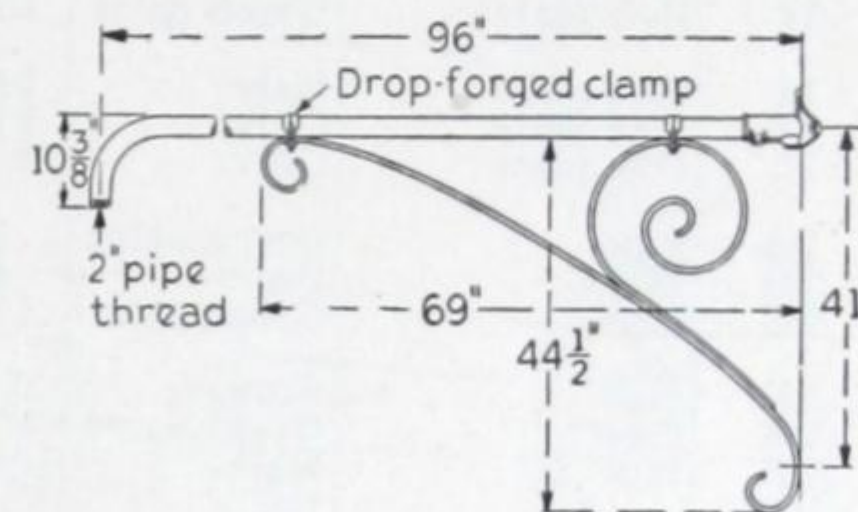


Fig. 18
8-ft right-angle-bend
2-in. bracket

FIG. NO. COMPLETE BRACKET	PIPE DIAM. in In.	BRACKET LENGTH in Ft	DESCRIPTION	FINISH	CAT. NO.	LIST PRICE Class GO-51	APPROX WT IN LB		PART REFERENCE NUMBER Refer to Page 166 for Description and Part Price				
							Net	Ship.	1	2	3	4	8
12	1 1/4	4	Right-angle-joint with scroll..... {	Paint	1229475G28	\$9.75	22	24	G	K	I	*C	A
12	1 1/4	4	Right-angle-joint with scroll and 3-hole {	Galv.	1229475G29	10.55	22	24	H	L	J	*D	B
13	1 1/4	4	Right-angle-bend with brace..... {	Paint	1229475G79	9.75	22	24	I	K	I	*C	A
14	1 1/4	4	Right-angle-bend with scroll..... {	Galv.	1229475G80	10.55	22	24	J	L	J	*D	B
14	1 1/4	4	Right-angle-bend with scroll..... {	Paint	1229475G32	7.00	19	21	G	I	O	C	
14	1 1/4	4	Right-angle-bend with scroll and 3-hole {	Galv.	1229475G33	7.70	19	21	H	J	P	D	
14	1 1/4	4	Right-angle-bend with scroll..... {	Paint	1229475G3	8.85	21	23	G	I	I	*C	
14	1 1/4	4	Right-angle-bend with scroll and 3-hole {	Galv.	1229475G4	9.80	21	23	H	J	J	*D	
14	1 1/4	4	Right-angle-bend with scroll and 3-hole {	Paint	1229475G77	8.85	21	23	I	I	I	*C	
14	1 1/4	4	Right-angle-bend with scroll and 3-hole {	Galv.	1229475G27	9.80	21	23	J	J	J	*D	
15	2	4	Right-angle-bend with scroll and 3-hole {	Galv.	ΔS-2824	16.00	53	53					
16	1 1/4	6	Right-angle-bend with scroll..... {	Paint	1229475G48	11.45	26	28	G	M	K	*C	
16	1 1/4	6	Right-angle-bend with scroll..... {	Galv.	1229475G49	12.50	26	28	H	N	L	*D	
17	1 1/4	8	Right-angle-bend with scroll and 3-hole {	Paint	1229475G50	13.90	33	35	I	O	M	*C	
17	1 1/4	8	Right-angle-bend with scroll and 3-hole {	Galv.	1229475G51	15.20	33	35	J	P	N	*D	
18	2	8	Right-angle-bend with scroll and 3-hole {	Galv.	ΔS-2828	23.00	67	67					

* Two clamps required.
ΔLocke Insulator Corp. Cat. No.

G-E NOVALUX BRACKETS

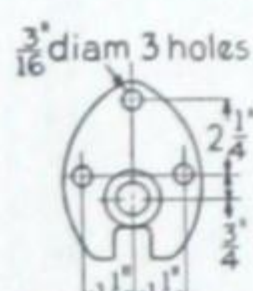
For Novalux Suspension Luminaires

PARTS

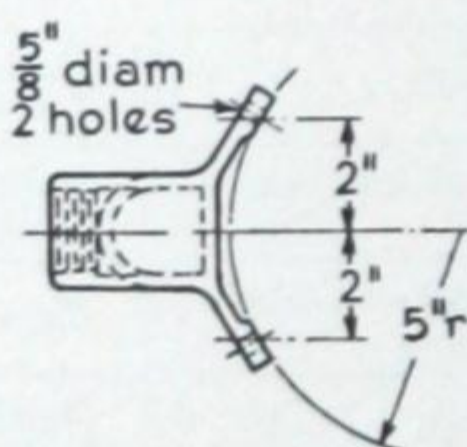
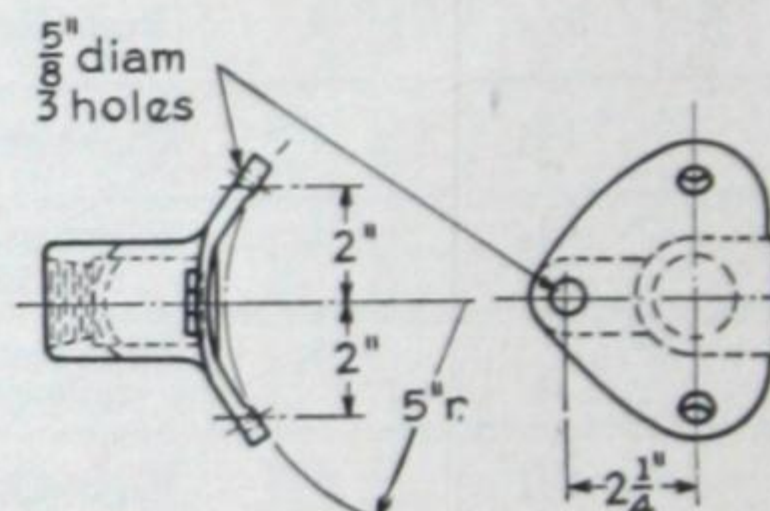
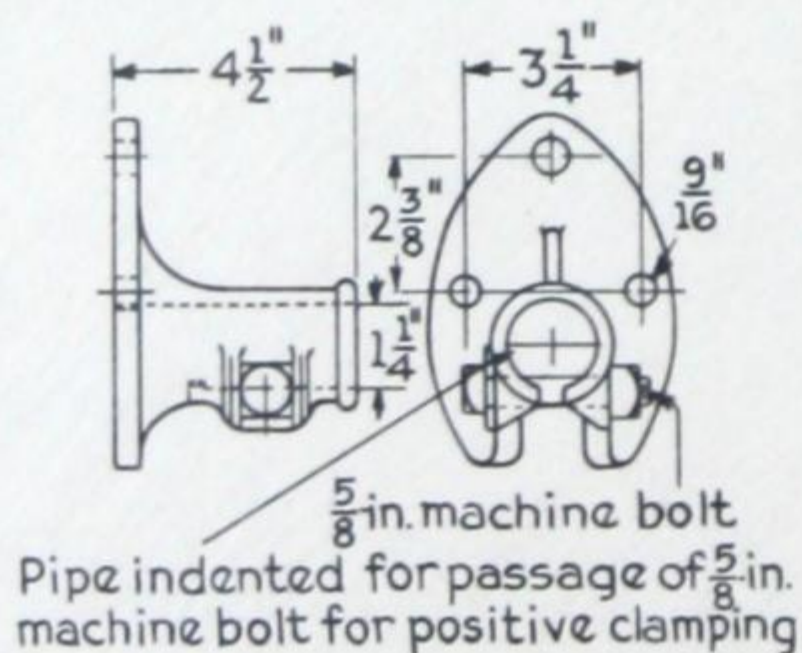
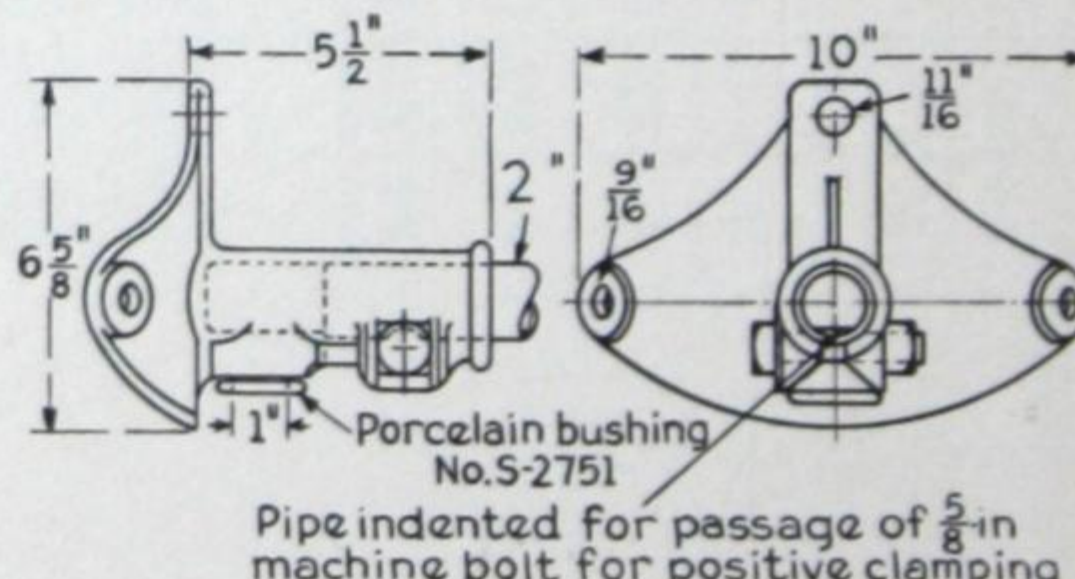
PART REFERENCE	DESCRIPTION	FINISH	DIAM PIPE in In.	BRACKET LENGTH in Ft	CAT. NO.	LIST PRICE Class GO-51	PART REFERENCE	DESCRIPTION	FINISH	DIAM PIPE in In.	BRACKET LENGTH in Ft	CAT. NO.	LIST PRICE Class GO-51
1A	Pole plate	Green paint	$\frac{3}{4}$"	....	2378302	\$1.25	2S	Pipe	Green paint	$\frac{3}{4}$ "	4	4878812	\$2.80
1B	Pole plate	Galv.	$\frac{3}{4}$"	....	2378303	1.40	2T	Pipe	Galv.	$\frac{3}{4}$ "	4	4878811	3.10
1C	Pole plate	Green paint	1 $\frac{1}{4}$"	....	3740886G2	3.50	3A	Brace	Green paint	$\frac{3}{4}$ "	4	2378470	1.00
1D	Pole plate	Galv.	1 $\frac{1}{4}$"	....	3740886G1	3.90	3B	Brace	Galv.	$\frac{3}{4}$ "	4	2378460	1.15
1E	Pole plate	Green paint	1 $\frac{1}{4}$"	....	110909	2.25	3C	Scroll	Green paint	1 $\frac{1}{4}$ "	20"	17X607	1.15
1F	Pole plate	Galv.	1 $\frac{1}{4}$"	....	17X604	2.50	3D	Scroll	Galv.	1 $\frac{1}{4}$ "	20"	17X608	1.25
1G	Pole plate	Green paint	1 $\frac{1}{4}$"	....	3740094P1	1.50	3E	Scroll	Green paint	1 $\frac{1}{4}$ "	21 $\frac{3}{8}$ "	31X10	2.50
1H	Pole plate	Galv.	1 $\frac{1}{4}$"	....	3740094P3	1.60	3F	Scroll	Galv.	1 $\frac{1}{4}$ "	21 $\frac{3}{8}$ "	31X11	2.75
1I	Pole plate	Green paint	1 $\frac{1}{4}$"	....	4802264P1	1.50	3G	Scroll	Green paint	1 $\frac{1}{4}$ "	49 $\frac{3}{4}$ "	17X611	2.50
1J	Pole plate	Galv.	1 $\frac{1}{4}$"	....	4802264P2	1.60	3H	Scroll	Galv.	1 $\frac{1}{4}$ "	49 $\frac{3}{4}$ "	17X612	2.75
1K	Pole plate	Galv.	1 $\frac{1}{4}$"	....	Δ S-2703M	1.60	3I	Scroll	Green paint	1 $\frac{1}{4}$ "	4	3740175G1	2.50
1L	Pole plate	Galv.	2	....	Δ S-3755M	2.75	3J	Scroll	Galv.	1 $\frac{1}{4}$ "	4	3740175G2	2.75
2A	Pipe	Green paint	$\frac{3}{4}$ "	4	3770112	2.80	3K	Scroll	Green paint	1 $\frac{1}{4}$ "	6	4815544G1	3.90
2B	Pipe	Galv.	$\frac{3}{4}$ "	4	3770055	3.10	3L	Scroll	Galv.	1 $\frac{1}{4}$ "	6	4815544G2	4.25
2C	Pipe	Green paint	1 $\frac{1}{4}$ "	20"	2338633	1.55	3M	Scroll	Green paint	1 $\frac{1}{4}$ "	8	3758114G2	5.15
2D	Pipe	Galv.	1 $\frac{1}{4}$ "	20"	2338895	1.80	3N	Scroll	Galv.	1 $\frac{1}{4}$ "	8	3758114G1	5.75
2E	Pipe	Green paint	1 $\frac{1}{4}$ "	21 $\frac{3}{8}$ "	3740874P2	3.85	3O	Brace	Green paint	1 $\frac{1}{4}$ "	4	3740175G3	1.15
2F	Pipe	Galv.	1 $\frac{1}{4}$ "	21 $\frac{3}{8}$ "	3740874P1	4.25	3P	Brace	Galv.	1 $\frac{1}{4}$ "	4	3740175G4	1.25
2G	Pipe	Green paint	1 $\frac{1}{4}$ "	49 $\frac{3}{4}$ "	17X605	4.70	4A	Clamp	Green paint	$\frac{3}{4}$"	....	4888783	.50
2H	Pipe	Galv.	1 $\frac{1}{4}$ "	49 $\frac{3}{4}$ "	17X606	5.20	4B	Clamp	Galv.	$\frac{3}{4}$"	....	4888782	.60
2I	Pipe	Green paint	1 $\frac{1}{4}$ "	4	2331588	3.85	4C	Clamp	Green paint	1 $\frac{1}{4}$"	....	4888779	.50
2J	Pipe	Galv.	1 $\frac{1}{4}$ "	4	2331590	4.25	4D	Clamp	Galv.	1 $\frac{1}{4}$"	....	4888171	.60
2K	Pipe	Green paint	1 $\frac{1}{4}$ "	45 $\frac{1}{8}$ "	2331587	2.75	5A	1 $\frac{1}{4}$ -in. adapter	Green paint	$\frac{3}{4}$"	....	2393538	Included with bracket
2L	Pipe	Galv.	1 $\frac{1}{4}$ "	45 $\frac{1}{8}$ "	2331589	3.00	5B	1 $\frac{1}{4}$ -in. adapter	Galv.	$\frac{3}{4}$"	....	1377296	
2M	Pipe	Green paint	1 $\frac{1}{4}$ "	6	4891313	5.05	6A	Adjusting nut	Green paint	$\frac{3}{4}$"	....	3740873P2	
2N	Pipe	Galv.	1 $\frac{1}{4}$ "	6	2331619	5.45	6B	Adjusting nut	Galv.	$\frac{3}{4}$"	....	3740873P1	
2O	Pipe	Green paint	1 $\frac{1}{4}$ "	8	4891314	6.25	7A	Washer	Green paint	$\frac{3}{4}$"	....	2393938	Included with bracket
2P	Pipe	Galv.	1 $\frac{1}{4}$ "	8	3770046	6.65	8A	Right-angle-joint	Green paint	1 $\frac{1}{4}$"	....	3758252G1	
2Q	Pipe	Green paint	1 $\frac{1}{4}$ "	45 $\frac{1}{8}$ "	4878827	2.75	8B	Right-angle-joint	Galv.	1 $\frac{1}{4}$"	....	3758252G2	
2R	Pipe	Galv.	1 $\frac{1}{4}$ "	45 $\frac{1}{8}$ "	4881997	3.00							

 Δ Locke Insulator Corp. Cat. No.

POLE PLATES



Drilling for pole plate

Fig. 1A or 1B
3/4-in. flatFig. 1G or 1H
1 1/4-in., 2-holeFig. 1I or 1J
1 1/4-in., 3-hole5/8 in. machine bolt
Pipe indented for passage of 5/8 in. machine bolt for positive clampingFig. 1K
1 1/4-in. malleable positive lockPorcelain bushing No. S-2751
Pipe indented for passage of 5/8 in. machine bolt for positive clampingFig. 1L
2-in. malleable positive lock

G-E NOVALUX HANGERS

For Novalux Suspension Luminaires

Spool insulators are of wet-process porcelain.
All metal parts are galvanized.

Threaded stud and hook suspension parts are interchangeable

Drop-forged suspension eyes; all other castings are malleable iron.

All studs are threaded for 1 $\frac{1}{4}$ -in. pipe thread unless otherwise specified.

Spool insulators are for 3500 volts and under.

Main insulator is for all series circuits.



Fig. 1
(Photograph 716564)



Fig. 1A

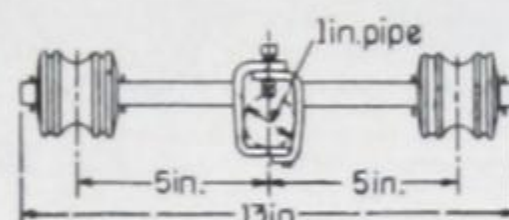


Fig. 1B

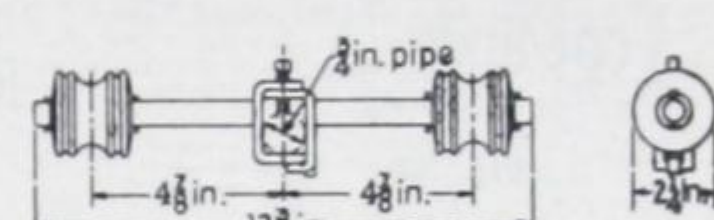


Fig. 1C

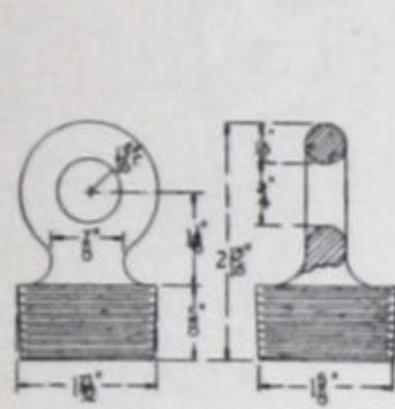


Fig. 2

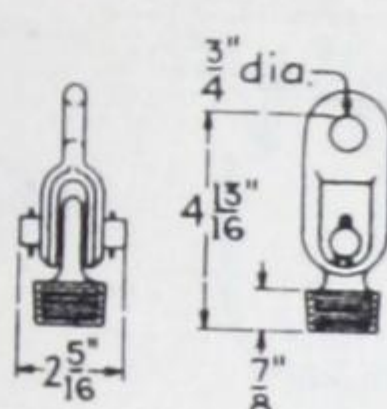


Fig. 3
(K-3740880)

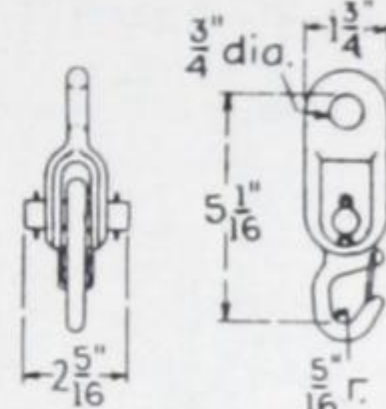


Fig. 4
(K-3740881)

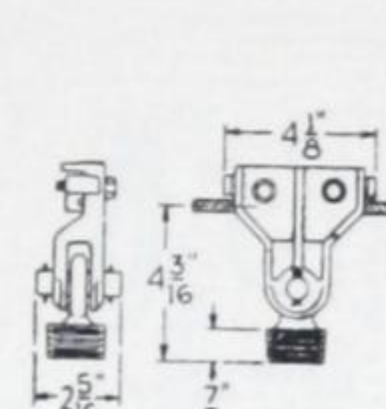


Fig. 5
(K-3740882)

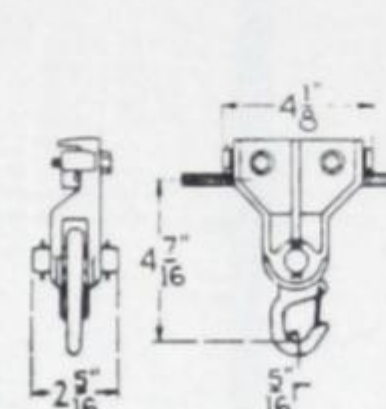


Fig. 6
(K-3740883)

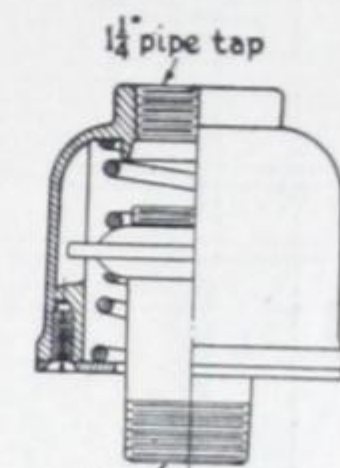


Fig. 7



Fig. 8
(Photograph 721088)

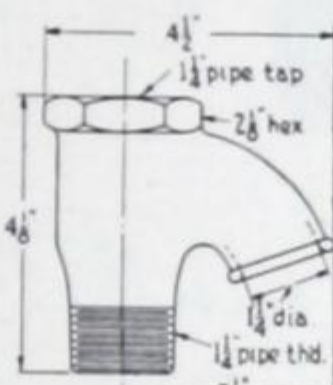


Fig. 8
(4821798)

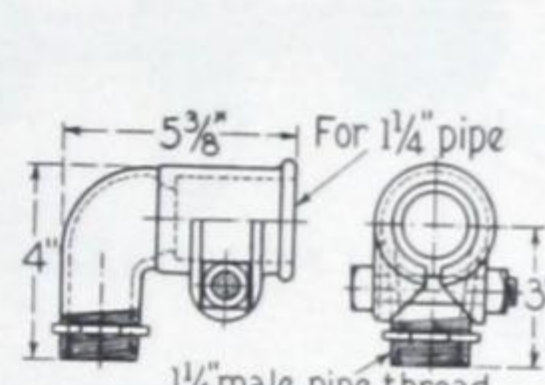


Fig. 9

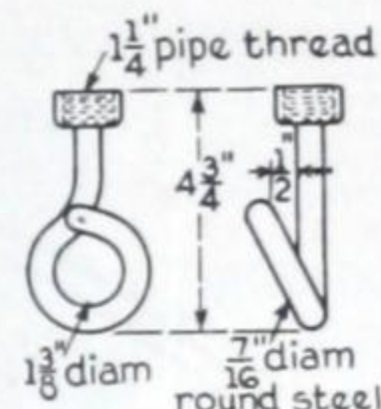


Fig. 10

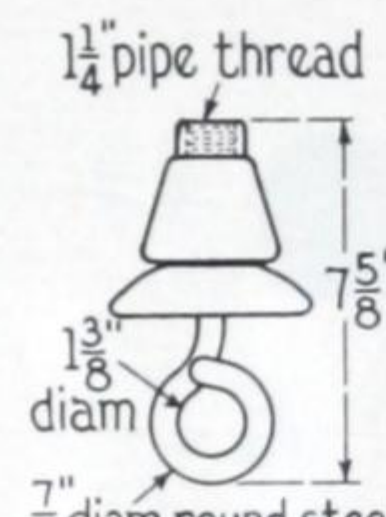


Fig. 11

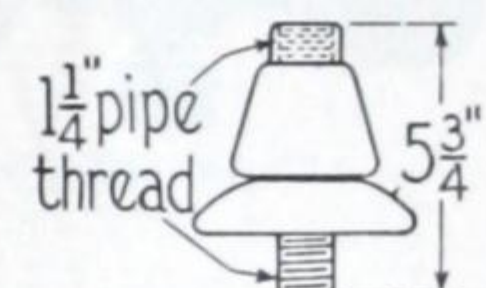


Fig. 12

FIG. NO.	DESCRIPTION	CAT. NO.	LIST PRICE Class GO-51	APPROX WT IN LB		FACTORY
				Net	Ship.	
1A	Spreader arm for 1 $\frac{1}{4}$ -in. pipe.....	4802122G1	\$2.50	2	3	RW
1B	Spreader arm for 1-in. pipe.....	4802122G2	2.50	2	3	RW
1C	Spreader arm for $\frac{3}{4}$ -in. pipe.....	4802122G3	2.50	2	3	RW
2	1 $\frac{1}{4}$ -in. suspension eye.....	2369563	.75	$\frac{3}{4}$	1	RW
2	$\frac{3}{4}$ -in. suspension eye.....	4884797	.75	$\frac{3}{4}$	1	RW
3	Eye-suspension with stud.....	3717173G13	1.50	1 $\frac{1}{2}$	3	RW
4	Eye-suspension with hook.....	3717173G14	1.50	1 $\frac{1}{2}$	3	RW
5	Clamp-suspension with stud.....	3717173G12	2.25	2 $\frac{1}{2}$	4	RW
6	Clamp-suspension with hook.....	3717173G15	2.25	2 $\frac{1}{2}$	4	RW
7	△Spring hanger.....	37X716	8.00			RW
8	Cable inlet.....	4830380P1	2.00			RW
9	Right-angle-clamp end fitting.....	†S-10044	2.00			L
10	Suspension eye.....	†S-2340	.80		$\frac{1}{2}$	L
11	Insulator suspension.....	†S-0514	5.20		3 $\frac{1}{4}$	L
12	Insulator suspension.....	†S-0524	5.20		3	L

△Specify luminaire to be used with hanger.
†Locke Insulator Corp. Cat. No.

G-E NOVALUX HANGERS

For Novalux Suspension Luminaires (Cont)



Fig. 13

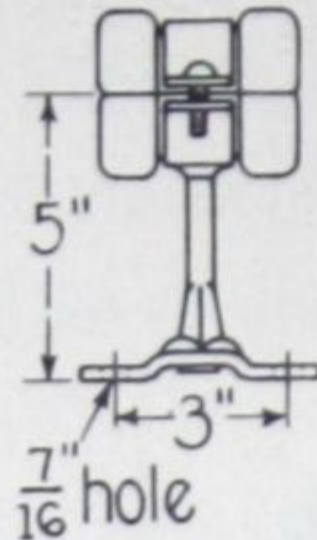


Fig. 14

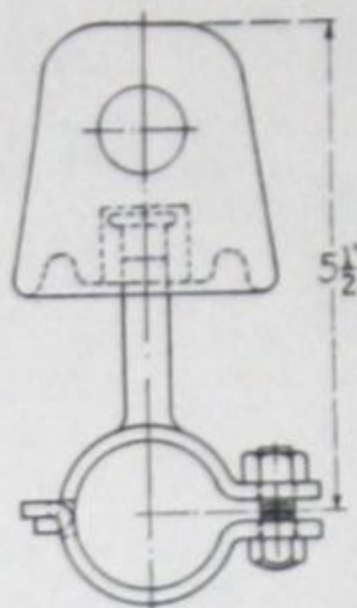


Fig. 15

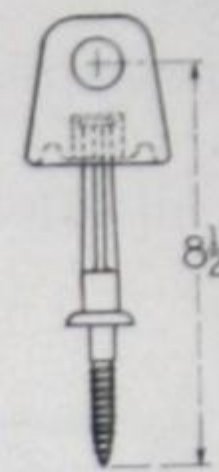


Fig. 16

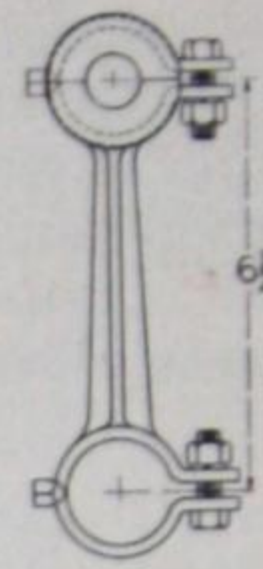
Fig. 17
(Photograph 723480)

Fig. 17

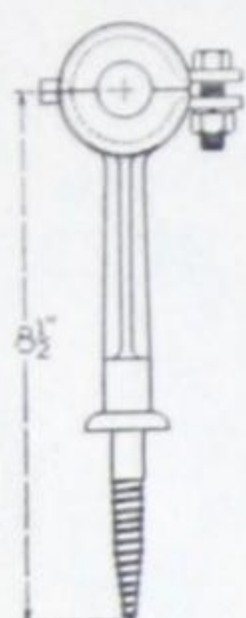


Fig. 18

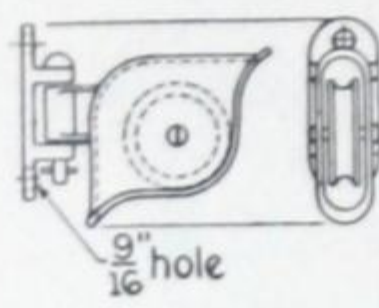
Fig. 18
(Photograph 723477)

Fig. 19



Fig. 20

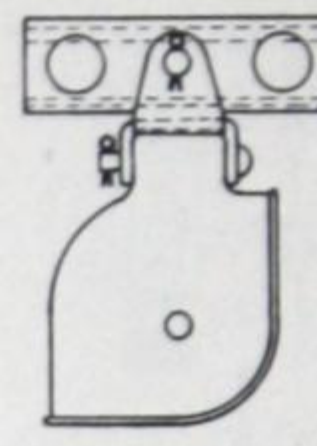


Fig. 21

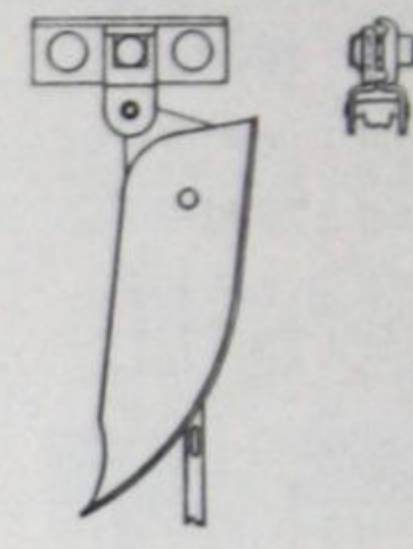
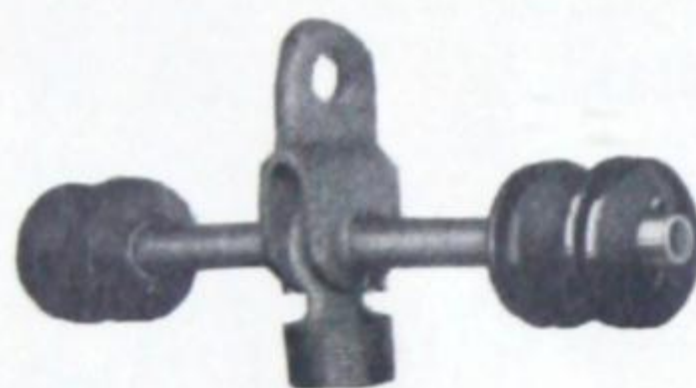
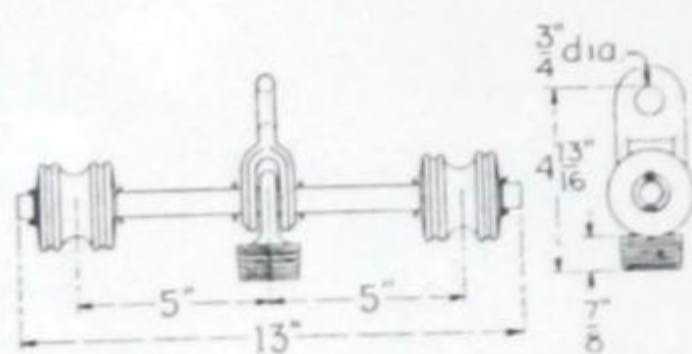


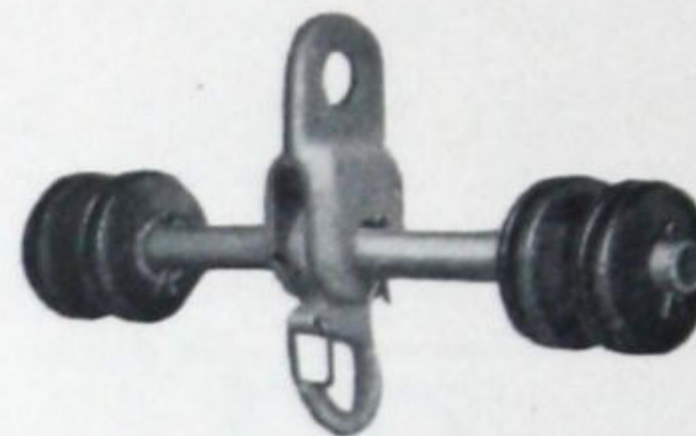
Fig. 22



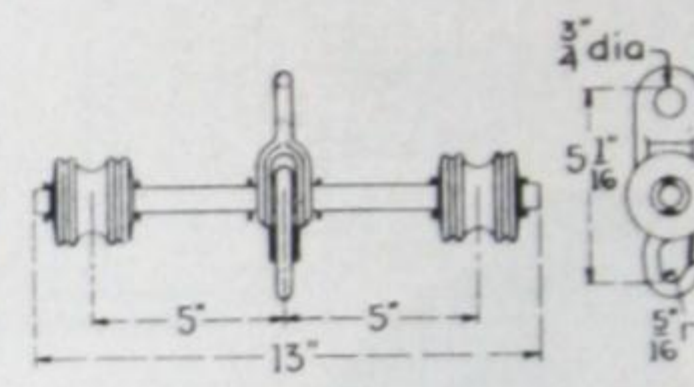
(Photograph 278471)



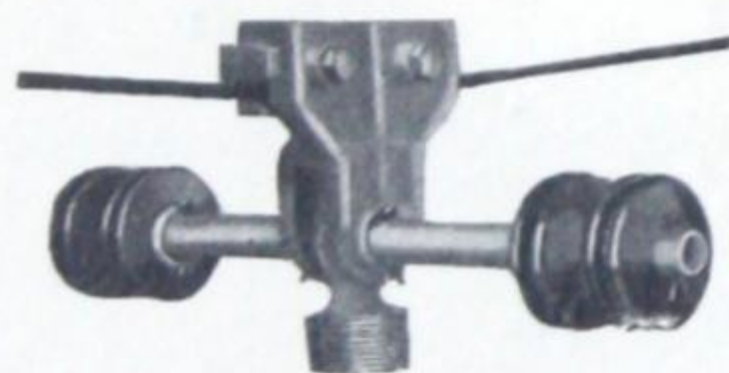
(K-3740876)



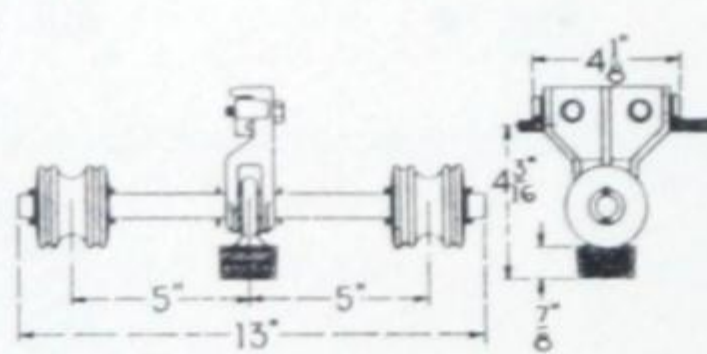
(Photograph 278470)



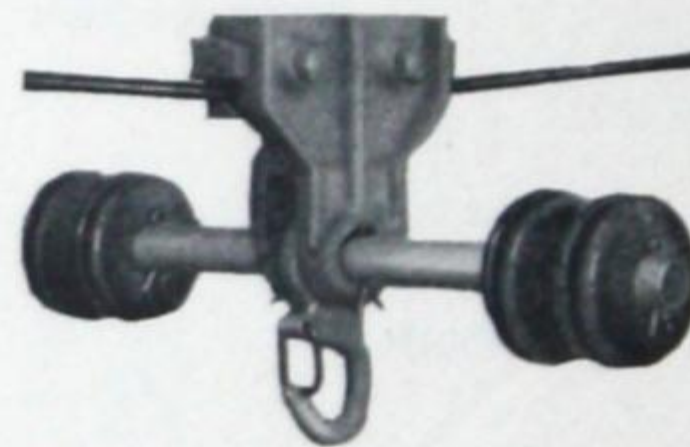
(K-3740877)



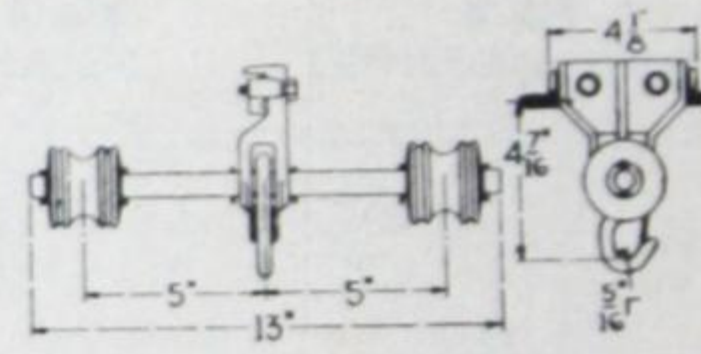
(Photograph 278475)



(K-3740878)



(Photograph 278474)



(K-3740879)

Fig. 25

Fig. 26

FIG NO.	DESCRIPTION	CAT. NO.	LIST PRICE Class GO-51	APPROX WT IN LB	
				Net	Ship.
13	Insulator suspension.....	†S-0504	\$5.20		3 1/4
14	Split insulator wire holder, flat-surface mounting.....	†S-064	2.10		3 1/4
15	Solid insulator wire holder, 1 1/4-in. bracket mounting.....	4830636G2	2.10		
16	Solid insulator wire holder, lag screw mounting.....	4830636G3	1.60		
17	Split insulator wire holder, 1 1/4-in. bracket mounting.....	4865297G1	2.10		
18	Split insulator wire holder, lag screw mounting.....	4865296G1	2.00		
19	Sleet-proof pulley.....	†S-0520	2.10		3 1/4
20	Sleet-proof lock pulley.....	†S-0525	3.90		7
21	Sleet-proof span-wire pulley.....	†S-2333	4.65		4 1/2
22	Sleet-proof span-wire lock pulley.....	†S-2334	5.20		8 1/4
23	Eye-suspension with stud and crossarm.....	3717173G1	4.00	3	4
24	Eye-suspension with hook and crossarm.....	3717173G2	4.00	3	4
25	Clamp-suspension with stud and crossarm.....	3717173G3	4.75	4	5
26	Clamp-suspension with hook and crossarm.....	3717173G4	4.75	4	5

† Locke Insulator Corp. Cat. No.

G-E NOVALUX HANGERS

For Novalux Suspension Luminaires (Cont)

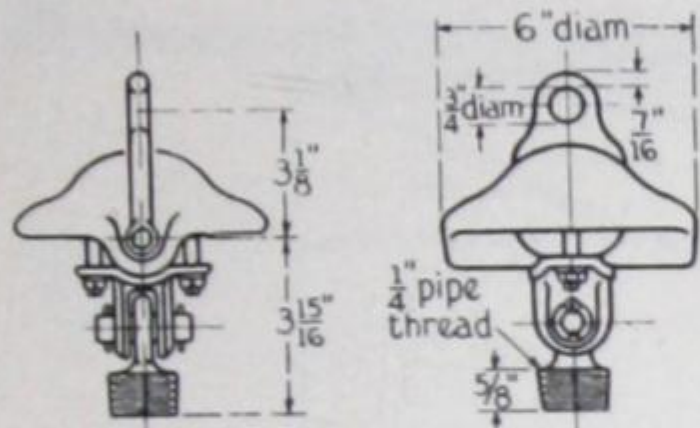


Fig. 27
(K-4802874)

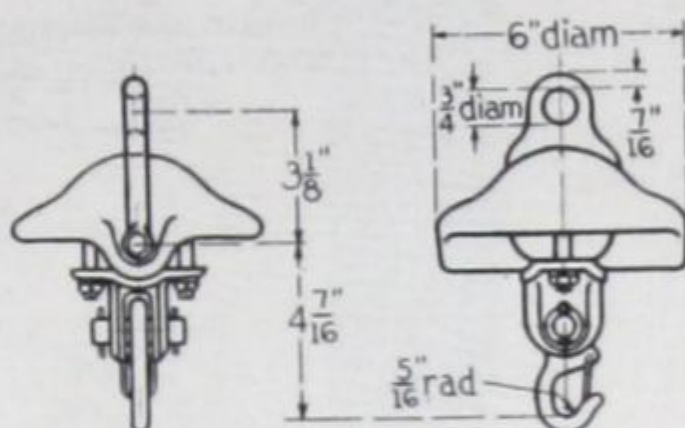
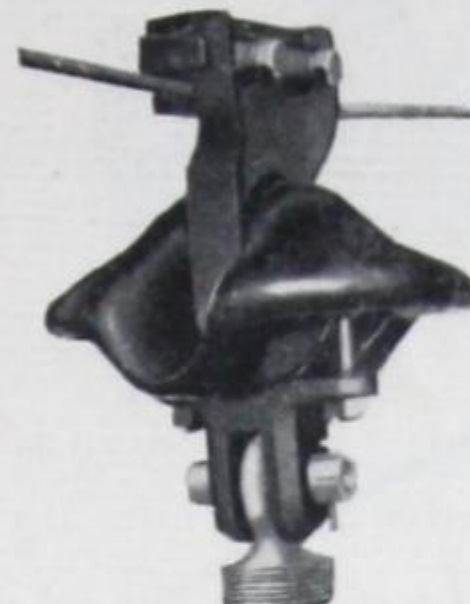


Fig. 28
(K-4802873)



(Photograph 717936)

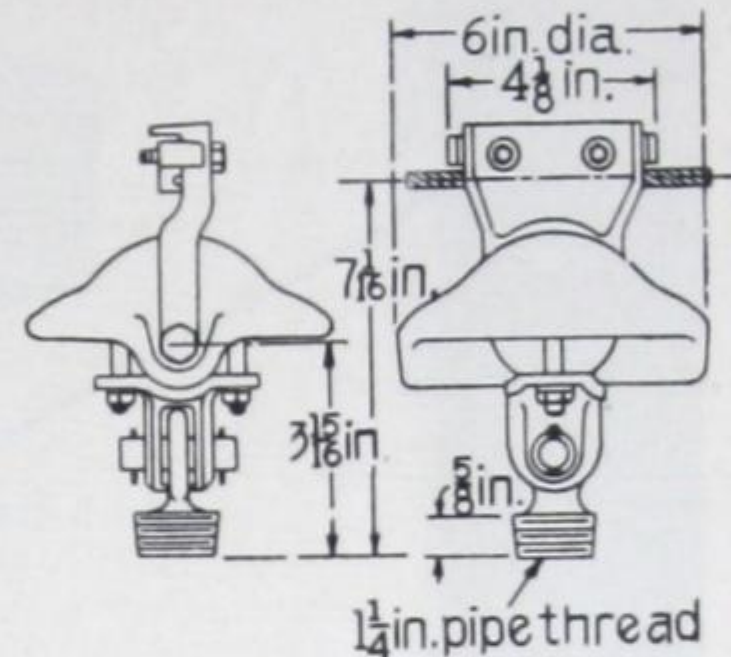
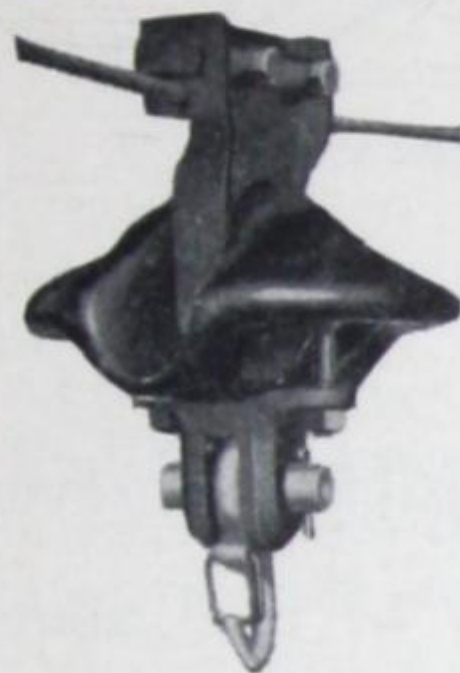


Fig. 29



(Photograph 717937)

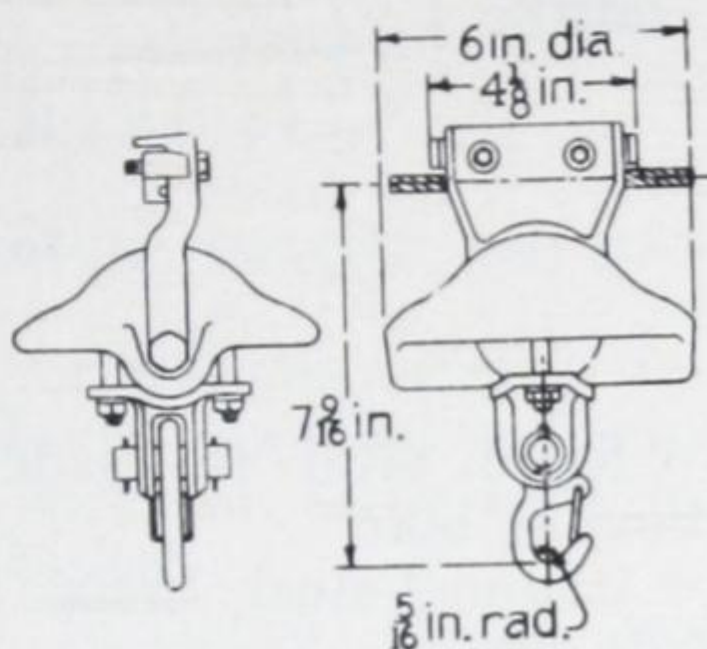


Fig. 30

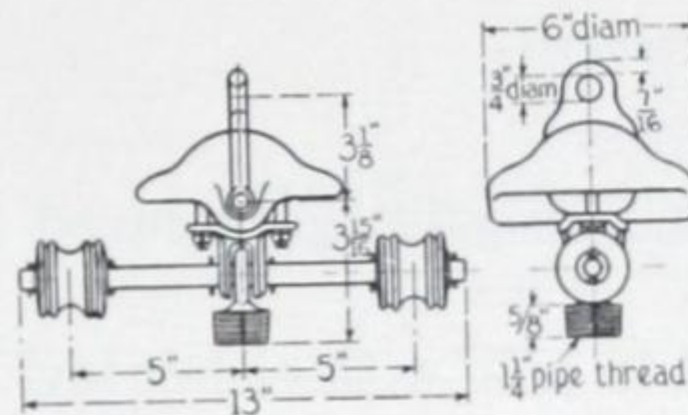


Fig. 31
(K-4802868)

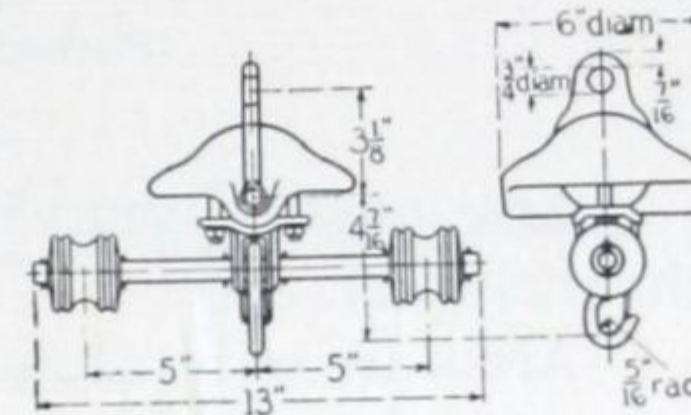


Fig. 32
(K-4802867)

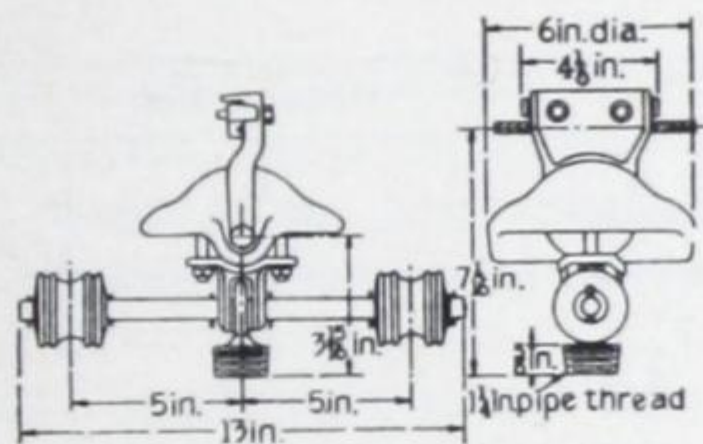
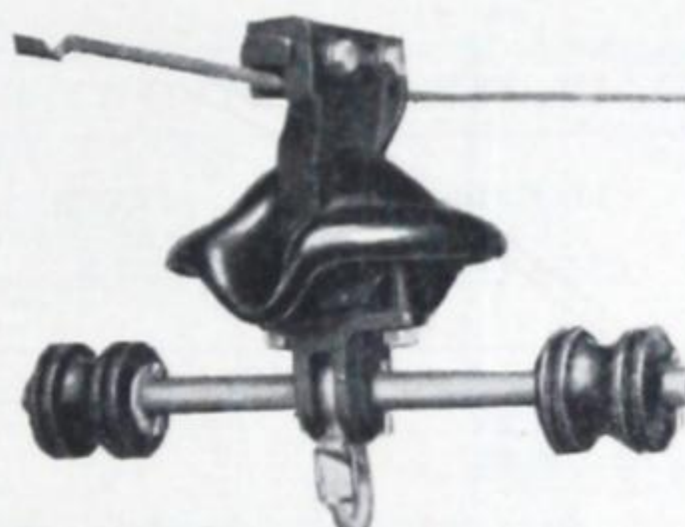


Fig. 33



(Photograph 717939)

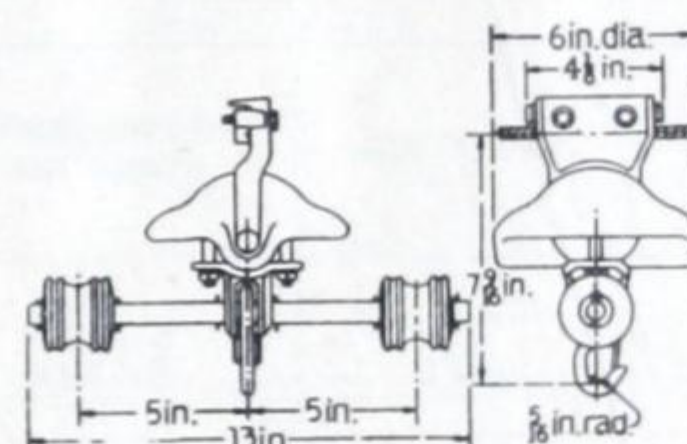


Fig. 34

FIG. NO.	DESCRIPTION	CAT. NO.	LIST PRICE Class GO-51	APPROX WT IN LB	
				Net	Ship.
27	Eye-suspension with stud and insulator.....	4802132G6	\$5.50	4	9
28	Eye-suspension with hook and insulator.....	4802132G5	5.50	4	9
29	Clamp suspension with stud and insulator.....	4802132G8	7.00	6	11
30	Clamp suspension with hook and insulator.....	4802132G7	7.00	6	11
31	Eye-suspension with stud, crossarm, and insulator.....	4802132G2	8.00	6	11
32	Eye-suspension with hook, crossarm, and insulator.....	4802132G1	8.00	6	11
33	Clamp-suspension with stud, crossarm, and insulator.....	4802132G4	9.50	8	13
34	Clamp-suspension with hook, crossarm, and insulator.....	4802132G3	9.50	8	13

CHANNEL-STEEL MAST ARMS

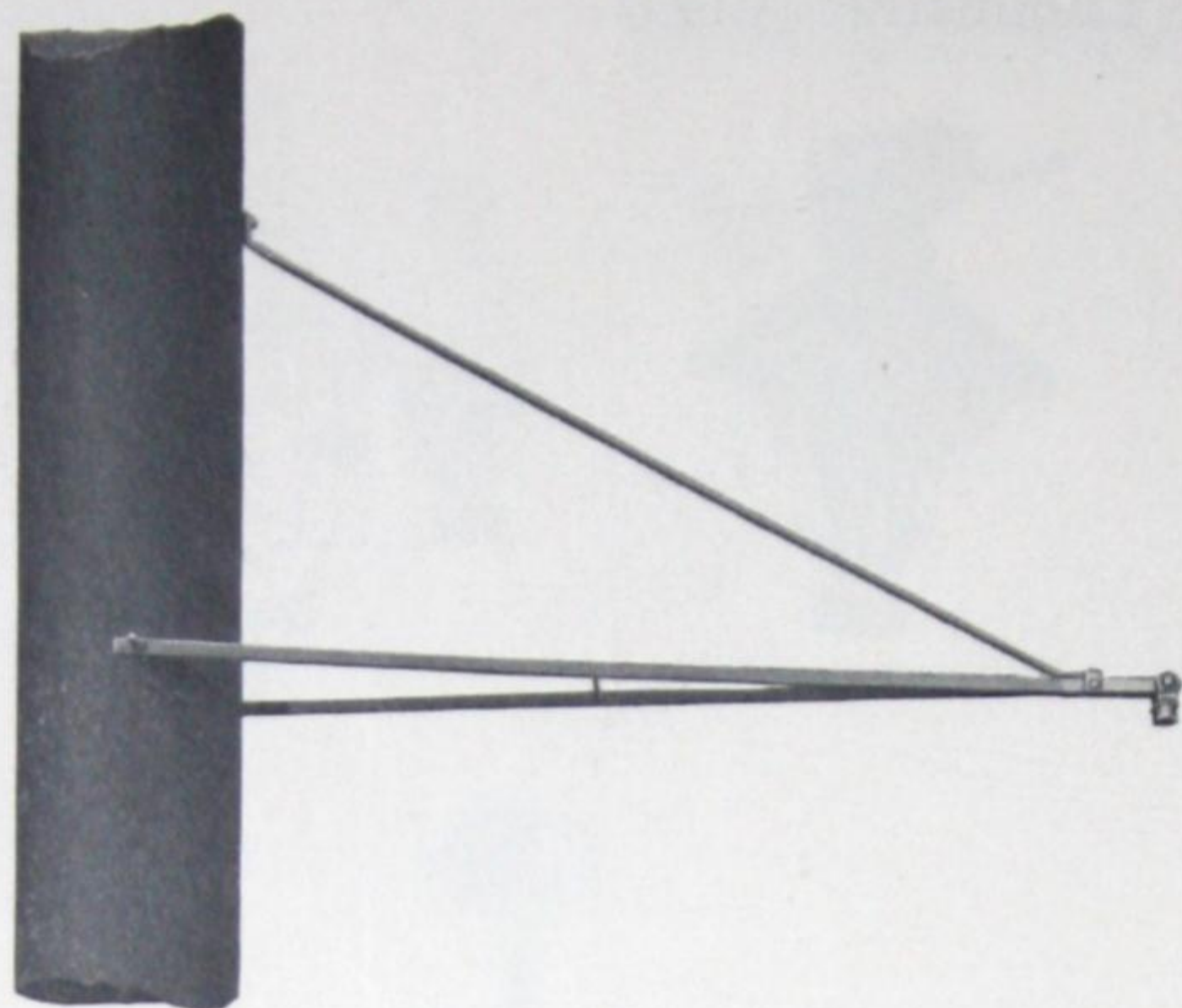


Fig. 1
(Photograph 486956)

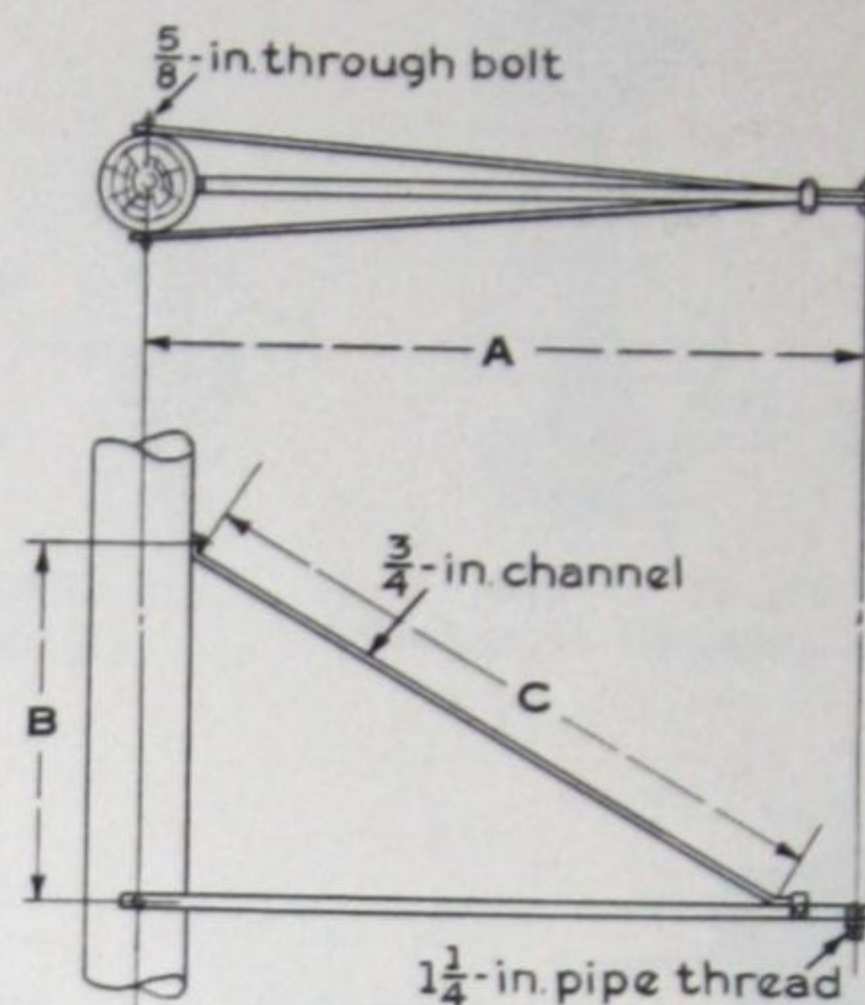


Fig. 2

Are made from $\frac{3}{4}$ -in. heavily galvanized channel steel.

Arms are to be attached to pole with either lag screws or through bolt.

Are available with flexible or rigid stud suspension only.

Rigid stud is made flexible by reversing attaching bolt.

Channel-steel brace may be used above or below arm.

No mounting bolts or screws are furnished.

These mast arms are suitable for mounting any standard street-lighting luminaire.

* $1\frac{1}{4}$ -IN. FLEXIBLE STUD TYPE (Fig. 1)

LENGTH in Ft	STOCK NO.	SUPERSEDED STOCK NO.	LIST PRICE Each Class GO-51	APPROX SHIP. WT in Lb.	DIMENSIONS		
					A Ft-In.	B Ft-In.	C Ft-In.
4	270	S-13004	\$3.25	8	4-9	1-9	3-7
6	271	S-13006	4.42	12	6-9	3-0	5-7

CHANNEL-STEEL MAST ARMS

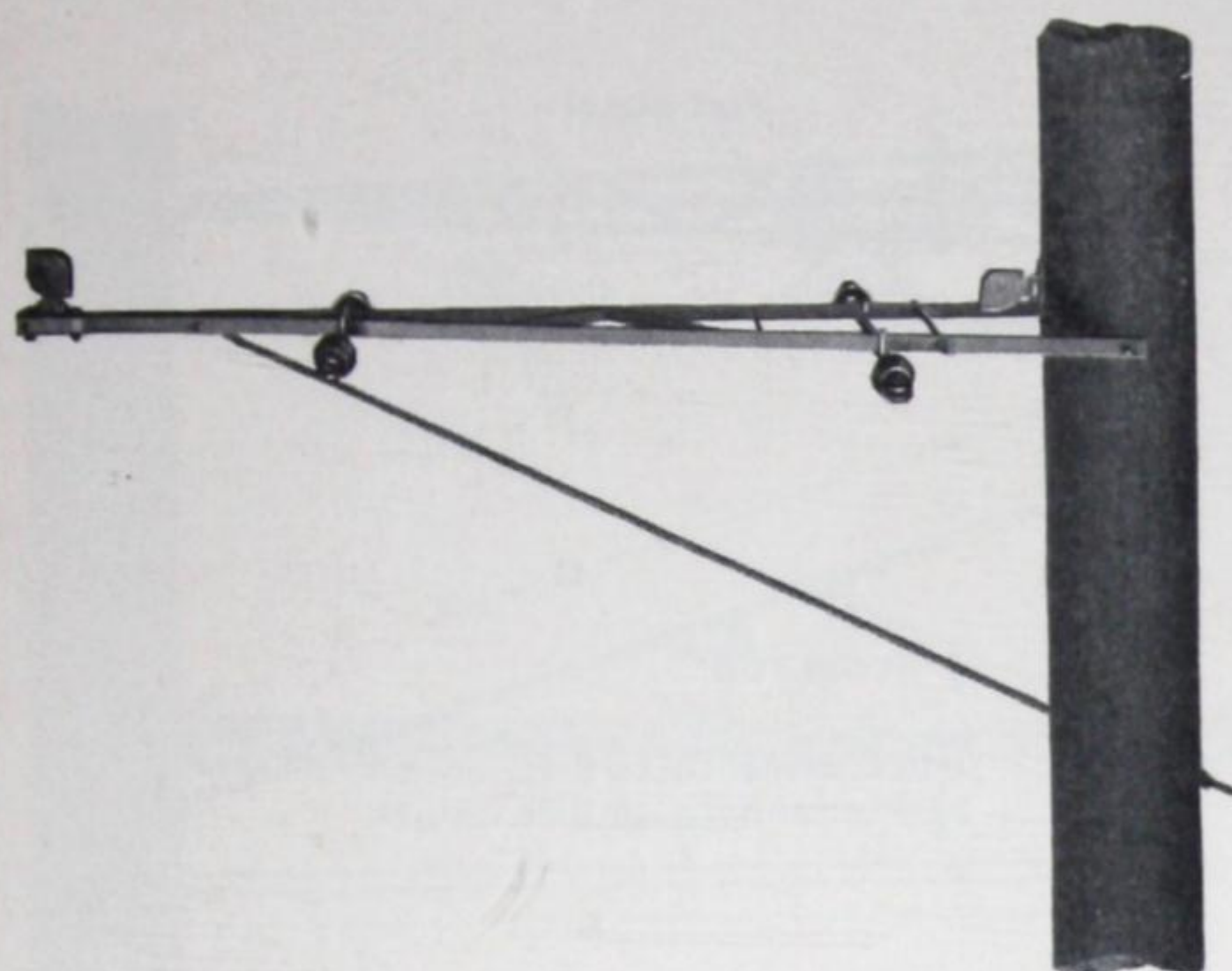


Fig. 3
(Photograph 486958)

Are made from 1½-in. heavily galvanized channel steel.

½-in.-diameter eye rod tension member.

Flat steel cross members are welded to channel.

Two channel-type spreader arms with lead insulator threads are furnished.

No insulators are furnished except when equipped with two-conductor wire holders.

Are available with flexible or rigid stud, sleet-proof pulleys or with pulley with clamp knob arrangement.

Rigid studs are made flexible by reversing attaching bolt.

No rope or chain is furnished with pulley types.

No mounting bolts or screws are furnished.

These mast arms are suitable for mounting any standard street-lighting luminaire.

Stud- and clamp-type is available with bottom T-iron brace. Apply to nearest sales office.

Two-conductor wire holders are furnished standard on the clamp-type arms. Are also furnished on other arms on request, at same price.

ALTERNATIVE LUMINAIRE SUSPENSIONS



Fig. 4



Fig. 5

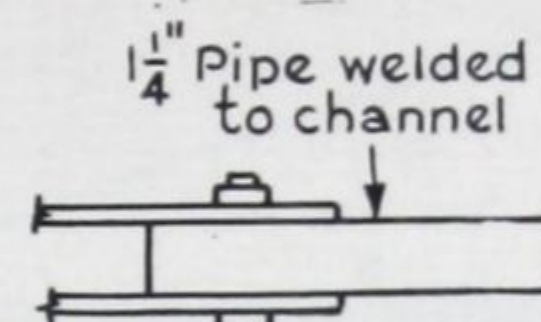


Fig. 7



Fig. 6

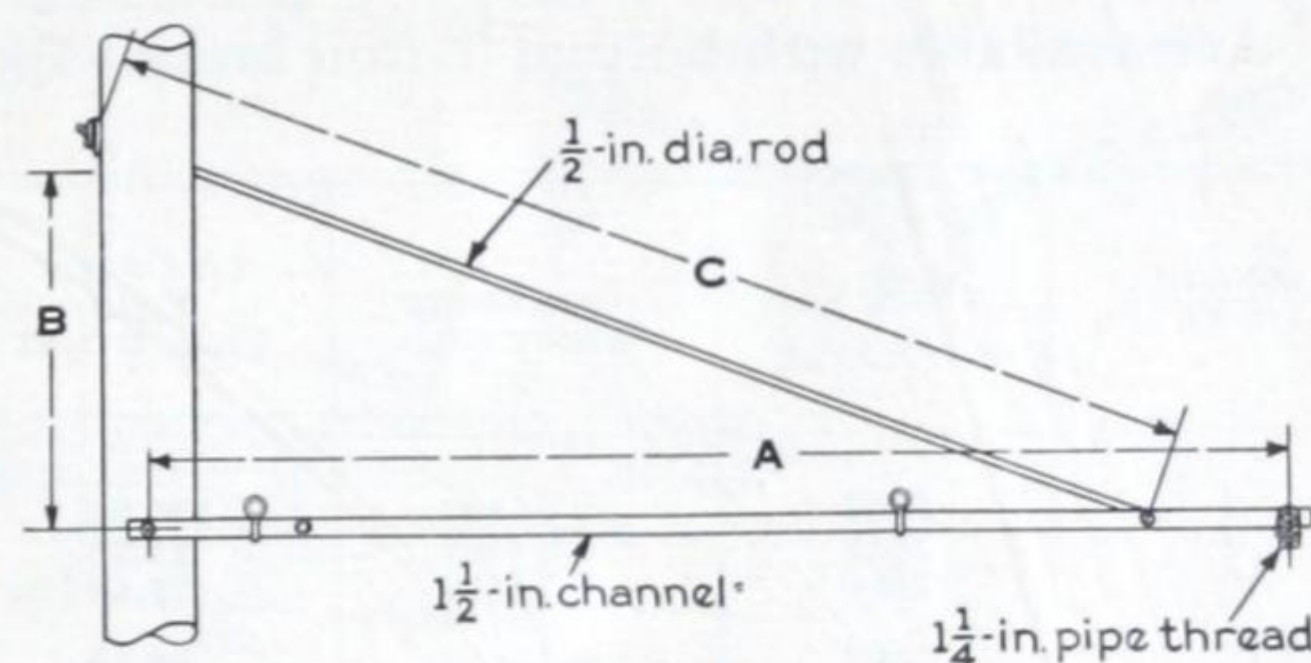
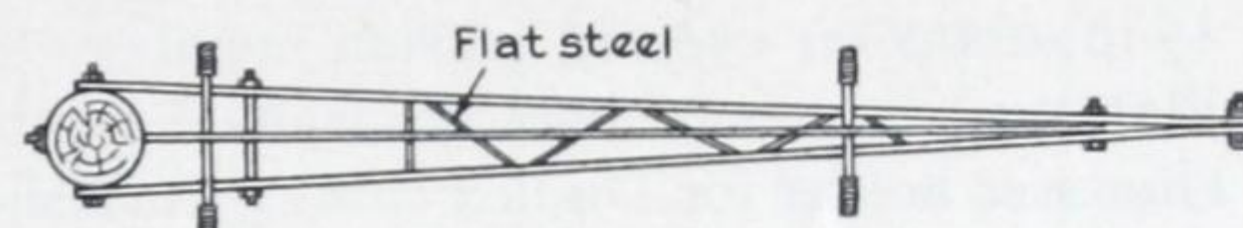


Fig. 8

LENGTH in Ft	STOCK NO.		SUPER- SEDED STOCK NO.	LIST PRICE Each Class GO-51	APPROX. SHIP. WT in Lb	DIMENSIONS			LENGTH in Ft	STOCK NO.	SUPER- SEDED STOCK NO.	LIST PRICE Each Class GO-51	APPROX. SHIP. WT in Lb	DIMENSIONS		
	† Flexible Stud	† Rigid Stud				A	B	C						A	B	C
						Ft-In.	Ft-In.	Ft-In.						Ft-In.	Ft-In.	Ft-In.
* 1¼-IN. STUD TYPE (Fig. 4)																
6	2546	2566	S-14006	\$12.20	30	6-9	2-6	6-7	6	2526	S-14206	\$15.20	38	6-9	2-6	6-7
8	2548	2568	S-14008	14.90	36	8-9	3-0	8-8	8	2528	S-14208	17.90	44	8-9	3-0	8-8
10	2550	2570	S-14010	17.60	43	10-9	3-6	10-8	10	2530	S-14210	20.60	51	10-9	3-6	10-8
12	2552	2572	S-14012	20.50	51	12-9	4-0	12-9	12	2532	S-14212	23.50	59	12-9	4-0	12-9
14	2554	2574	S-14014	21.60	60	14-9	4-6	14-10	14	2534	S-14214	24.60	68	14-9	4-6	14-10
16	2556	2576	S-14016	24.80	70	16-9	5-0	16-10	16	2536	S-14216	27.80	78	16-9	5-0	16-10
SLEET-PROOF PULLEY-TYPE (Fig. 5) (TWO PULLEYS FURNISHED)																
6	2506		S-14106	\$13.20	35	6-9	2-6	6-7	6	2446	.....	\$12.20	30	6-9	2-6	6-7
8	2508		S-14108	15.90	41	8-9	3-0	8-8	8	2448	.....	14.80	36	8-9	3-0	8-8
10	2510		S-14110	18.60	48	10-9	3-6	10-8	10	2450	.....	17.60	43	10-9	3-6	10-8
12	2512		S-14112	21.50	56	12-9	4-0	12-9	12	2452	.....	20.50	51	12-9	4-0	12-9
14	2514		S-14114	22.60	65	14-9	4-6	14-10	14	2454	.....	21.60	60	14-9	4-6	14-10
16	2516		S-14116	25.80	75	16-9	5-0	16-10	16	2456	.....	24.80	70	16-9	5-0	16-10
Δ CLAMP-TYPE (Fig. 7) (WITH 1¼-IN. PIPE WELDED AT END OF ARM)																
6									6							
8									8							
10									10							
12									12							
14									14							
16									16							

* ¾-in. stud available on request at same price.

† Stud assembled as indicated. May be changed to either flexible or rigid type by reversing stud.

ΔFurnished with two-conductor wire holders as standard.

CHANNEL-STEEL MAST ARMS

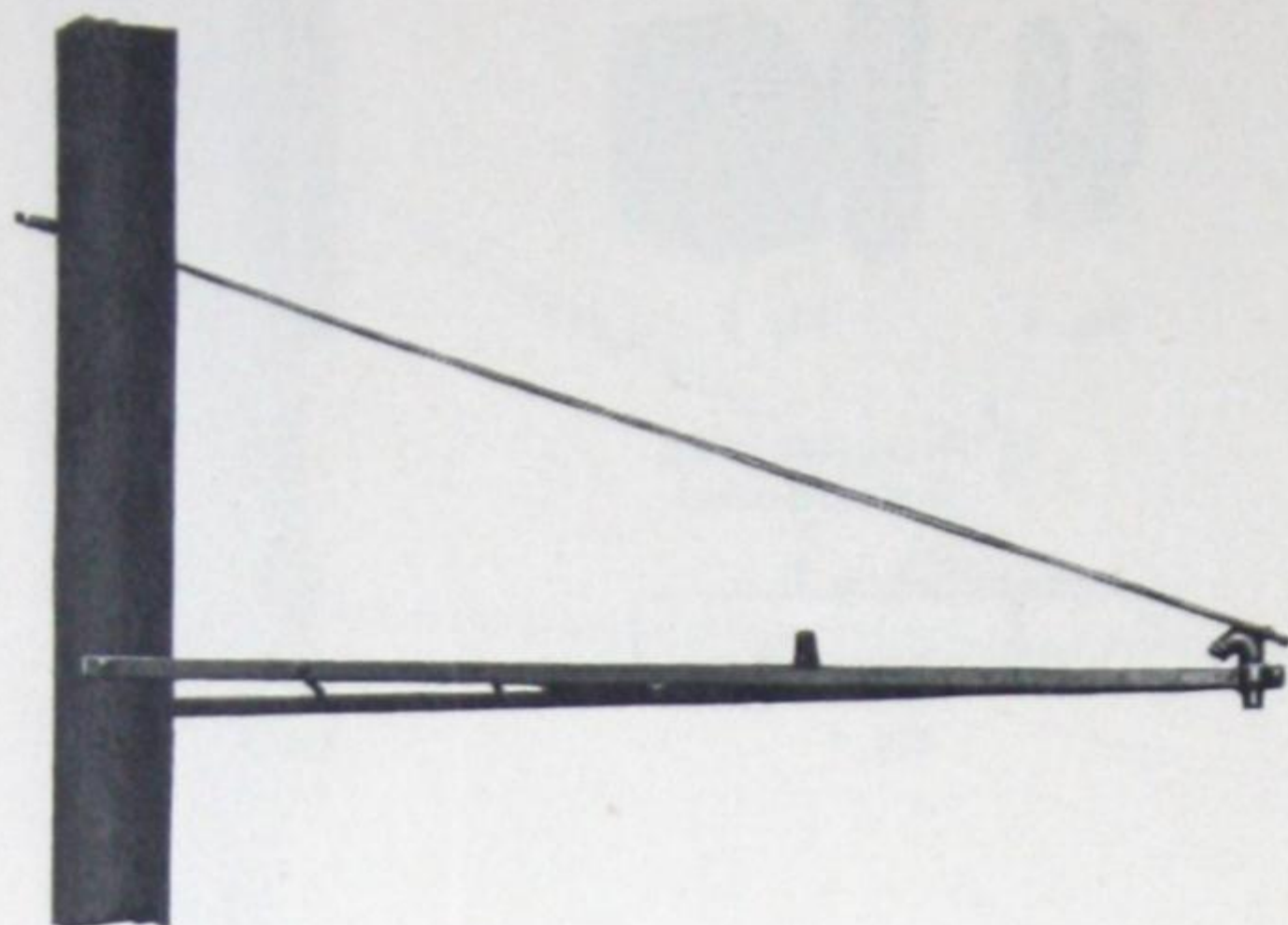


Fig. 8
(Photograph 486959)

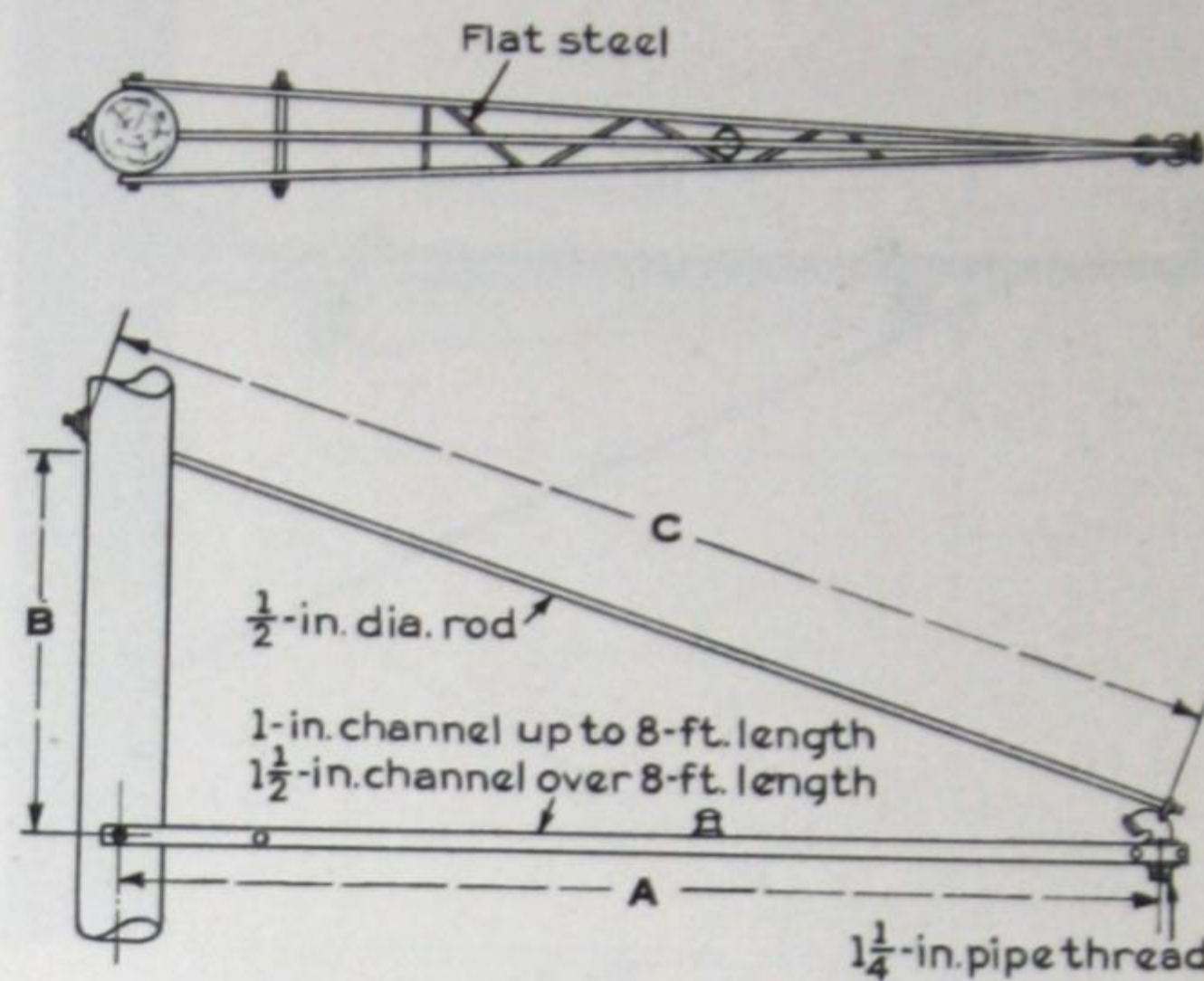


Fig. 9

Are made from 1½-in. heavily galvanized channel steel.

½-in.-diameter eye rod tension member.

Flat steel cross members are welded to channel.

One wire holder for Duplex cable is furnished.

Cable inlet for internally wired type luminaires.

Inside diameter of cable inlet is 1¼ in.

No mounting bolts or screws are furnished.

These mast arms are suitable for mounting any standard street-lighting luminaire.

Are available with bottom T-iron brace. Apply to nearest sales office.

LENGTH in Ft	STOCK NO.	SUPERSEDED STOCK NO.	LIST PRICE Each Class GO-51	APPROX SHIP. WT in Lb	DIMENSIONS		
					A Ft-In.	B Ft-In.	C Ft-In.
6	2656	S-14406	\$14.20	30	6-9	3-9	7-9
8	2658	S-14408	16.90	36	8-9	4-2	9-9
10	2660	S-14410	19.60	41	10-9	4-7	11-9
12	2662	S-14412	22.50	49	12-9	5-0	13-9
14	2664	S-14414	23.60	55	14-9	5-6	15-9
16	2666	S-14416	26.80	60	16-9	5-9	17-9

TROLLEY MAST ARMS

Chain Type

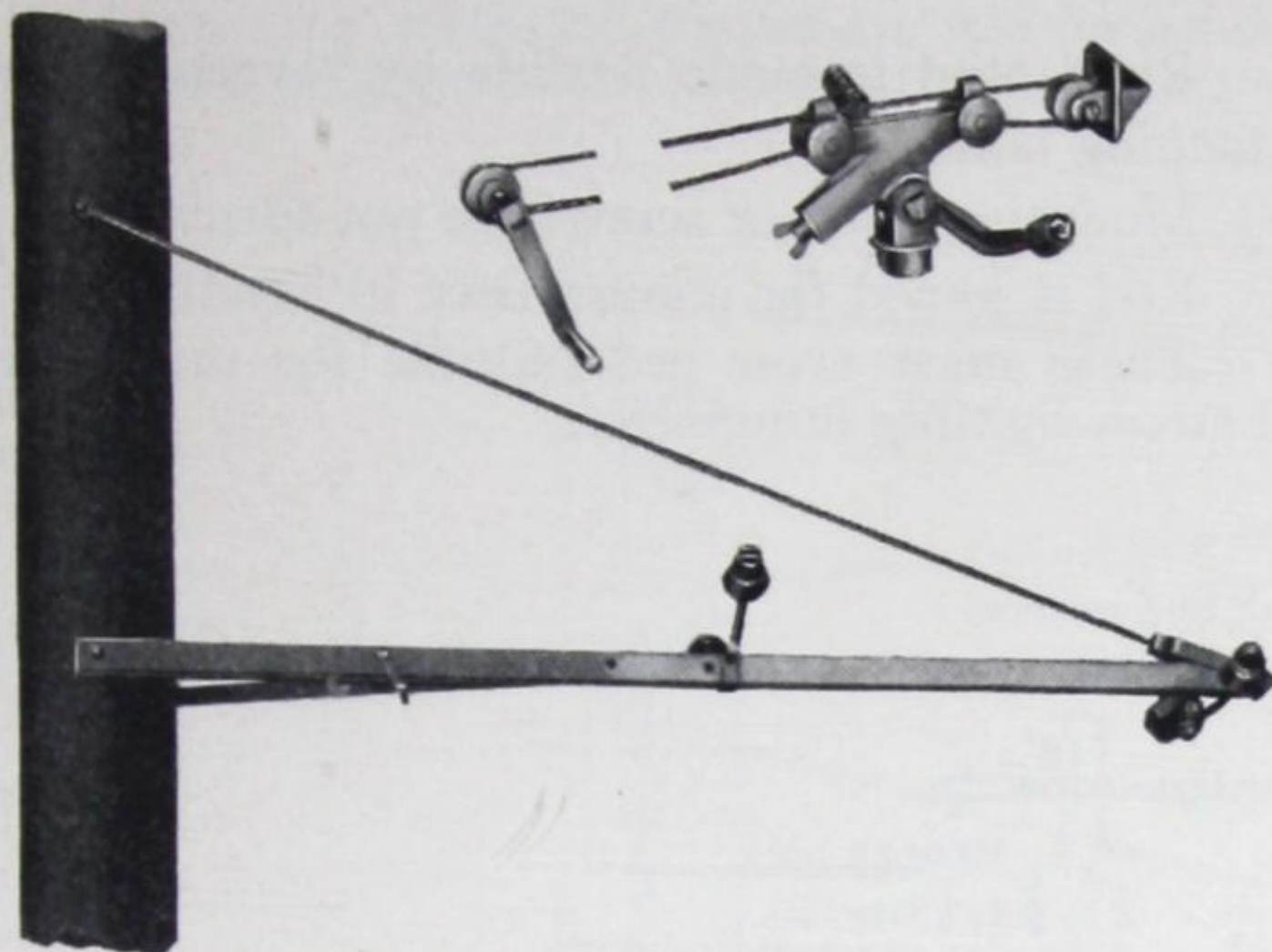


Fig. 10
(Photograph 486957)

Channel section is No. 12 gauge channel iron heavily galvanized.

End ornament, movable carriage, mounting stud, crank—malleable iron, hot-dip galvanized.

Bolts, nuts, cotter pins, bushings, chain—bronze.

Spreader arms have bronze spring thread. Lead thread is available on request at same price.

No insulators are furnished.

Rigid stud is made flexible by reversing attaching bolt.

No mounting bolts or screws are furnished.

New improved device for tightening chain.

These mast arms are suitable for mounting any standard street-lighting luminaire.

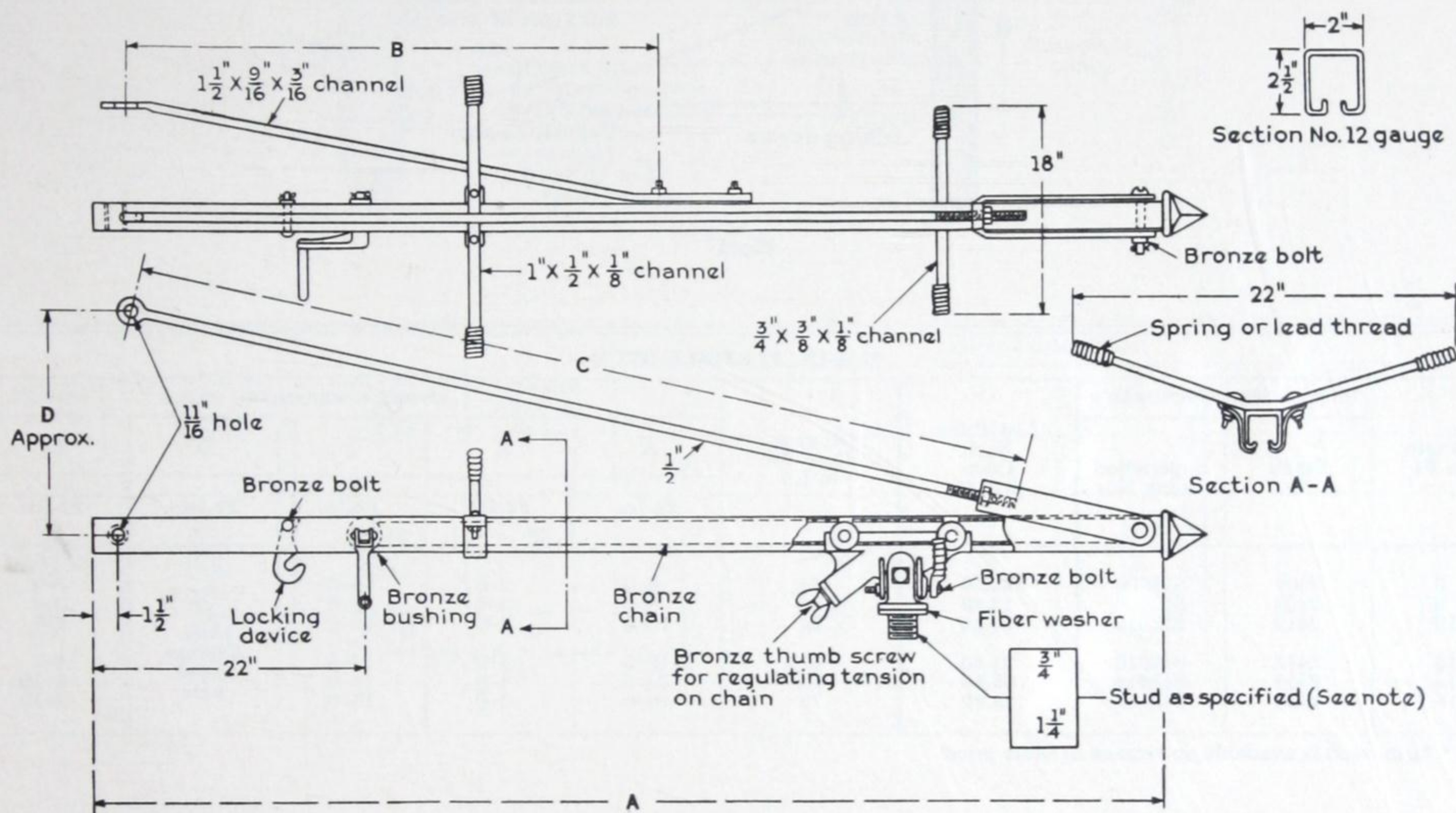


Fig. 11

* 1 1/4-IN. FLEXIBLE STUD

LENGTH in Ft	STOCK NO.	SUPERSEDED STOCK NO.	LIST PRICE Each Class GO-51	APPROX SHIP. WT in Lb	DIMENSIONS			
					A Ft-In.	B Ft-In.	C Ft-In.	D Ft-In.
6	2606	S-13506	\$18.10	38	6-0	3-4	6-0	2-6
8	2608	S-13508	20.00	45	8-0	3-4	8-0	3-0
10	2610	S-13510	22.50	52	10-0	4-7	10-0	3-6
12	2612	S-13512	24.90	59	12-0	4-7	12-0	4-0
14	2614	S-13514	27.30	66	14-0	5-10	14-0	4-6
16	2616	S-13516	30.50	73	16-0	5-10	16-0	5-0

* 3/4-in. stud available on request at same price.

TROLLEY MAST ARMS

Rod-operated Type

Channel steel is made of No. 12-gauge channel steel and is heavily galvanized.

End ornament, movable carriage, and mounting stud are malleable iron hot-dip galvanized.

Spreader arms have bronze spring thread. Lead thread is available on request at same price.

Insulators are not furnished.

Rigid stud is made flexible by reversing the attaching bolt.

Mounting bolts or screws are not furnished.

Rod is joined for convenience in handling.

These mast arms are suitable for mounting all street-lighting luminaires.

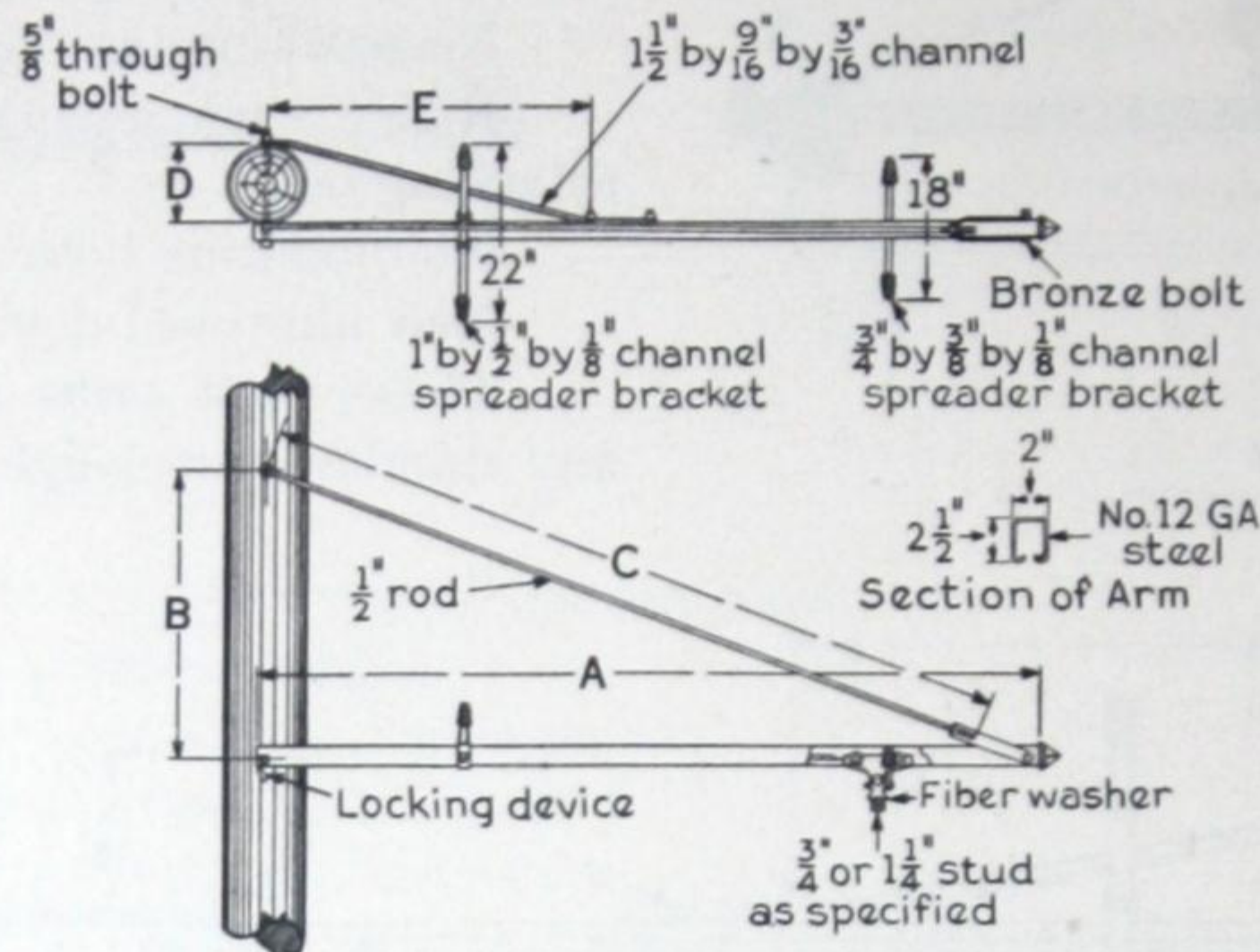


Fig. 1

*1 1/4-IN. FLEXIBLE STUD

Length in Ft	OUTSIDE MANUFACTURER'S		List Price Each Class GO-51	Approx Ship. Wt in Lb	APPROX DIMENSIONS				
	Stock No.	Superseded Stock No.			A	B	C	D	E
					Ft-In.	Ft-In.	Ft-In.	Ft-In.	Ft-In.
6	2406	S13606	\$15.60	38	6-0	2-6	6-0	Variable to Any Average Sized Pole	3-4
8	2408	S13608	17.90	45	8-0	3-0	8-0		3-4
10	2410	S13610	19.10	54	10-0	3-6	10-0		4-7
12	2412	S13612	21.80	62	12-0	4-0	12-0		4-7
14	2414	S13614	25.20	72	14-0	4-6	14-0		5-10
16	2416	S13616	28.90	79	16-0	5-0	16-0		5-10

* 3/4-in. stud is available on request at same price.

SOCKETS AND RECEPTACLES

To meet the growing demand for equipment to utilize large lamps with high current rating and high wattage, it has been necessary to redesign sockets and receptacles. The high current, particularly that of 20-amp series circuits, requires that the contact resistance of the sockets and receptacles be reduced to the absolute minimum. To withstand the high temperature encountered with large lamps in enclosed-type luminaires, new materials for socket shells have been developed.

MULTIPLE SOCKETS

A number of changes have been made in the design of the mogul multiple socket in an effort to reduce the resistance to the absolute minimum. The center contact, connecting strip, and binding post are now constructed of one piece of metal. The binding post has two screws for clamping the lead-in wires. The other binding post is attached to a large horseshoe exposing a large surface for contact with the contact shell. The contact shell employs the modern spring construction to clamp the lamp base tightly.

SERIES SOCKETS

Many new features have been added to the line of series sockets. A complete new design of socket has been developed with contact shell and prongs with interchangeable porcelain or composition shells. The standard socket shell has straight sides as illustrated in Fig. 6. The flared shell, Fig. 10, accommodates a 25,000-lumen lamp. The shell may be removed, for replacement, by removing two

screws. Interchangeable with the porcelain shell is a composition shell in either black or white finish. The composition shell has the distinct advantage of being less fragile than porcelain. The prongs are constructed from a single piece of metal from the clips holding the film cutout direct to the lamp base. This form of construction reduces contact resistance and prolongs the life of the socket. Further to reduce resistance, all metal parts are bronze or copper nickel-plated. The tip of the center contact provides a short circuit to the under side of the screw shell upon removal of the lamp. The sockets are designed for continuous operation on a 20-amp circuit.

SERIES RECEPTACLES

The new designs of series receptacles provide two sets of contact springs, the inner of which has a reinforced double leaf. The contact springs are so arranged that the series circuit is not interrupted on removing or inserting the socket. One set of springs is always in contact with the socket prongs or short-circuited. As with the mogul multiple sockets, two screw binding posts are provided. The series receptacles are designed to operate continuously on a 20-amp circuit.

ADAPTERS

Adapters are available for operating a medium screw-base lamp from a mogul socket. A mogul socket extension of 2½ inches is available for operating 7-in. light-center lamps in luminaires designed for 9½-in. light-center lamps.



Fig. 1
(Photograph 717962)



Fig. 2
(Photograph 720098)



Fig. 3
(Photograph 232303)



Fig. 4
(Photograph 720371)



Fig. 5
(Photograph 232303)



Fig. 6
(Photograph 722944)



Fig. 7
(Photograph 722945)



Fig. 8
(Photograph 722948)



Fig. 9
(Photograph 722949)



Fig. 10
(Photograph 722946)



Fig. 11
(Photograph 722947)



Fig. 12
(Photograph 722950)



Fig. 13
(Photograph 722951)



Fig. 14
(Photograph 278369)

SOCKETS AND RECEPTACLES

DESCRIPTION	FIG. NO.	CAT. NO.	SUPERSEDES CAT. NO.	LIST PRICE Class GO-51	STD PKG QTY	APPROX SHIP. WT in Lb per Std Pkg
Multiple socket						
Mogul base { Skeleton type.....	1	45X841	156722	\$1.20	100	35
Skeleton type for Form 45-L units.....	2	45X850		1.20	100	35
Porcelain with 1/2-in. pipe tap.....	3	49X669	159377	1.60	50	80
Medium base { Porcelain type for Form 45-L units.....	4	28795		1.00	100	35
Porcelain with yoke for 1/2-in. pipe.....	5	GE427		1.40	100	50
Series socket						
Porcelain.....	6	4815866G1	{ 25711 39X344 }	1.40	100	80
Porcelain shell only.....	7	4830801G2		.40	50	18
Textolite (black).....	8	4815866G2	{ 294300 45X838 }	1.40	50	45
Textolite shell only (black).....	9	4830801G1		.40	50	18
Textolite (white finish).....	6	4815866G3		1.50	50	45
Textolite shell only (white finish).....	7	4830801G3		.50	50	18
Mogul (Straight Shell)						
Porcelain.....	10	4815866G13		1.40	100	80
Porcelain shell only.....	11	4815845P1		.40	50	18
Textolite (black).....	12	4815866G10		1.40	50	45
Mogul (Flared shell)						
Textolite shell only (black).....	13	4815845G4		.40	50	18
Textolite (white finish).....	10	4815866G12		1.50	50	45
Textolite shell only (white finish).....	11	4815845G6		.50	50	18
Mogul { Extension—porcelain.....	14	12X491		2.00	50	50
Contact shell and prong assembly only.....	15	60X161		1.00	50	15
Medium—Porcelain.....	16	25720		1.40	50	50
Series receptacles						
Porcelain with cast horizontal binding posts.....	17	4815233G1		1.50	20	25
Porcelain with cast vertical binding posts.....	18	4815233G3		1.50	20	25
Porcelain with cast horizontal binding posts.....	19	4815794G23		1.70	20	25
Porcelain with cast vertical binding posts.....	20	4815794G5	{ 177143, 294185, 39X329 }	1.70	20	25
Porcelain for Form 45-L units.....	21	4815089G1	3740189G1	1.50	20	25
Porcelain for suspension units.....	22	4830476G2	25713, 39X348, GE-066	1.50	100	75
Porcelain with iron yoke (1/8 in.—18 thread).....	23	4830476G1	25712, 39X330	1.90	20	20
Porcelain with iron yoke (1/8 in.—18 thread) and spacers.....	24	4830476G3	293652, 1257712G4	1.90	20	25
Combination—Series-Adapters						
For operating medium screw-base lamps from mogul socket.....	25	GE070		.60	100	25
Mogul extension—2 1/2 in.....	26	39X332	20X45	2.10	50	46
Yokes						
Iron yoke only (1/8 in.—18 thread) with 2—screws Cat. No. 48X758, used with Cat. No. 39X330..	27	25714		.40	100	35



Fig. 15
(Photograph 720398)



Fig. 16
(Photograph 232303)

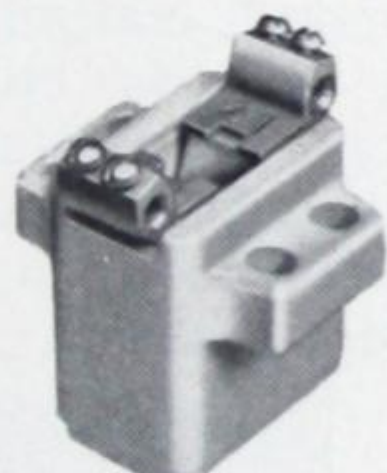


Fig. 17
(Photograph 722721)

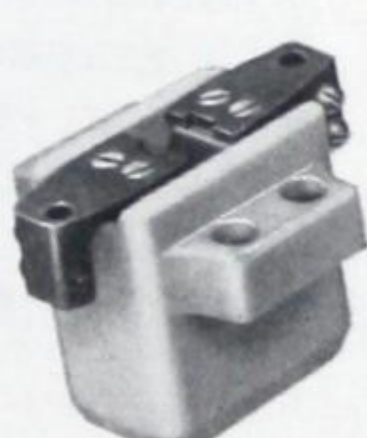


Fig. 18
(Photograph 723363)

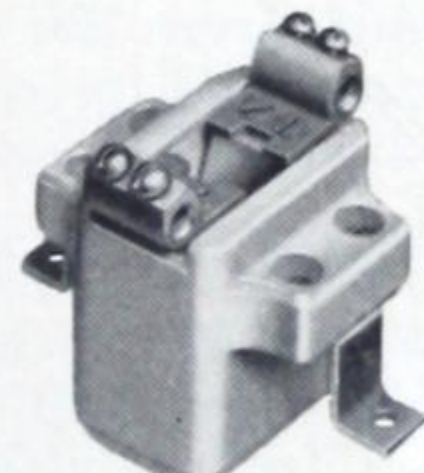


Fig. 19
(Photograph 722721)



Fig. 20
(Photograph 723365)

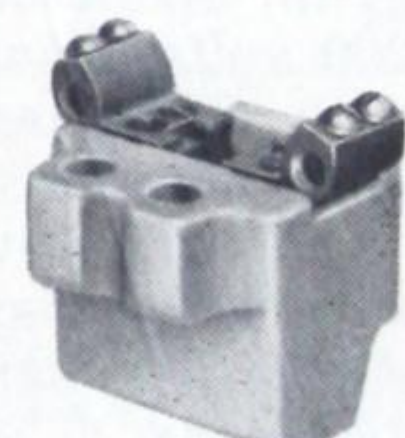


Fig. 21
(Photograph 722808)

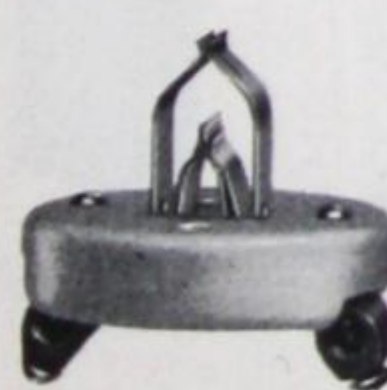


Fig. 22
(Photograph 722794)



Fig. 23
(Photograph 722785)

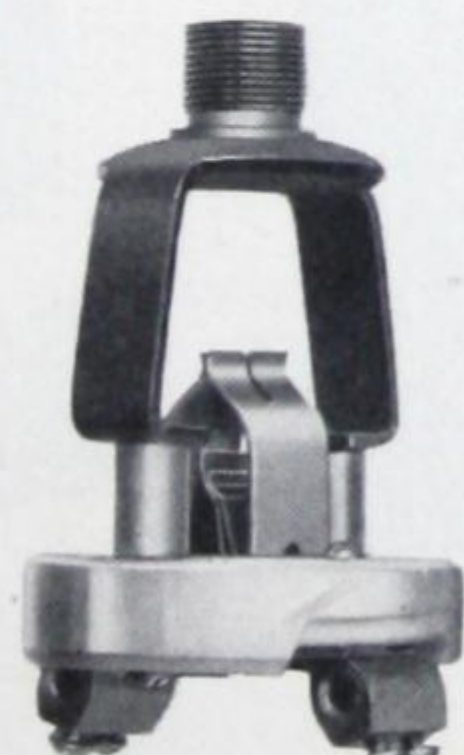


Fig. 24
(Photograph 722786)



Fig. 25
(Photograph 415072)



Fig. 26
(Photograph 417211)



Fig. 27
(Photograph 720370)

G-E FILM CUTOUTS

The G-E film cutouts have been designed to meet the requirements for use on series street-lighting systems. The correct operation of the film cutout is very essential in order to obtain economical and satisfactory operation on street-lighting circuits. G-E film cutouts are designed to meet all the requirements for the operation of all sizes of lamps from straight series circuit and from the secondary of IL transformers. These are available in two types with varying breakdown voltage limits in order to meet all of the applications. The enclosed copper-oxide disk and the magazine-film cutout are the two general types available.

APPLICATION

ENCLOSED COPPER-OXIDE DISK

This construction is available in three sizes and with three voltage breakdown limits. The $\frac{3}{4}$ -in. diameter size is recommended where customers require a large cutout because of ease of handling and where the latest type of series sockets with the rounded prongs is used. The $\frac{9}{16}$ -in. diameter size is recommended for use with all of the older types of series sockets. The $\frac{27}{64}$ -in. size is made special for use with the screw-type series sockets where a small diameter cutout is necessary.

The low-voltage cutout, Cat. No. 4815602G2 with $\frac{3}{4}$ -in. diameter, Cat. No. 4815920G2 with $\frac{9}{16}$ -in. diameter, and Cat. No. 4815603G2 with $\frac{27}{64}$ -in. diameter have breakdown limits from 50 to 90 volts. They are recommended for use with all IL transformers up to and including 15,000-lumen capacity and all lamps shown under Table 2.

The medium-voltage cutouts, Cat. No. 4815602G1 with $\frac{3}{4}$ -in. diameter, Cat. No. 4815920G1 with $\frac{9}{16}$ -in. diameter, and Cat. No. 4815603G1 with $\frac{27}{64}$ -in. diameter have breakdown limits from 100 to 200 volts. These cutouts are recommended for use with IL transformers of 25,000-lumen capacity and all lamps shown under Table 1.

The high-voltage cutouts, Cat. No. 4815602G3 with $\frac{3}{4}$ -in. diameter and Cat. No. 4815920G3 with $\frac{9}{16}$ -in. diameter have breakdown limits from 250 to 350 volts. These are recommended for use with lamps shown under Table 3.

MAGAZINE-FILM CUTOUT

The magazine-film cutout is made in only one rating. This has breakdown limits from 100 to 150 volts and is satisfactory for use with IL transformers of 25,000-lumen capacity and all lamps shown under Table 1.

CONSTRUCTION

ENCLOSED COPPER-OXIDE DISK

The enclosed copper-oxide cutouts of the three different diameters, namely $\frac{3}{4}$, $\frac{9}{16}$, and $\frac{27}{64}$ inches, are all constructed on the same principle.

These cutouts consist essentially of two metal disks, a colored washer for identifying the different ratings, and the copper-oxide cutout. The parts are assembled together to form a weatherproof housing

for the copper-oxide surface, which protects it from moisture and also from anything else that might affect the operation of the oxide cutout. The colored washer identifies the voltage breakdown of the cutout. The brown washer designates the cutout rated 50 to 90 volts, a black washer designates the cutout rated 100 to 200 volts, and the red washer designates the cutout rated 250 to 350 volts. In addition to this, the catalog number and the voltage breakdown limits are stamped definitely on the metal disk used for enclosing the cutout, with the exception of the $\frac{27}{64}$ -in. design which is too small to permit the use of this marking. The $\frac{27}{64}$ -in. size, however, is marked with the identifying letters "L" for low voltage or a 50- to 90-volt breakdown and "M" for medium voltage or 100- to 200-volt breakdown.

MAGAZINE FILM

The magazine-film cutout consists of a roll of special insulating ribbon contained in a tubular capsule $\frac{5}{16}$ in. in diameter and $\frac{13}{16}$ in. long, which can be mounted between the prongs of the series sockets without the use of any additional attachment. The insulating ribbon is approximately 8 inches long and will provide at least 12 fresh dielectric surfaces. The capsules are nonrefillable and should be replaced when the ribbon is exhausted.

When this magazine-film cutout is used, there is definite assurance that the proper cutout is available at the socket at all times, and this eliminates the use of substitute material which might not give satisfactory operation.

PACKING

All of the enclosed copper-oxide film cutouts are packed for shipment in quantities of 50 in cylindrical metal containers. Each container is lithographed on the outside with the catalog number, voltage rating, and sizes of lamps on which the cutout should be used. This assures the operator that the correct cutout is being used and is also convenient for handling.

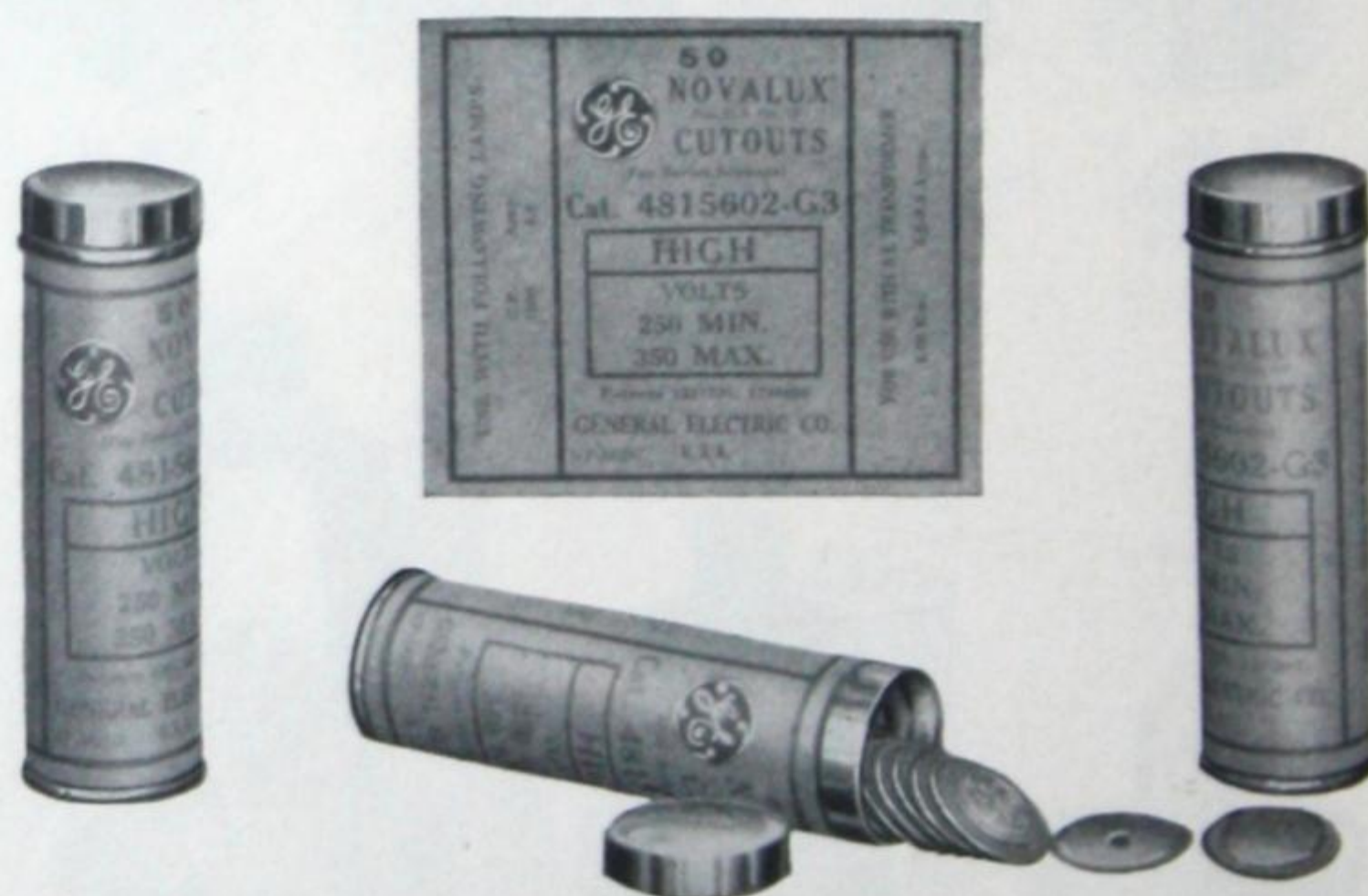


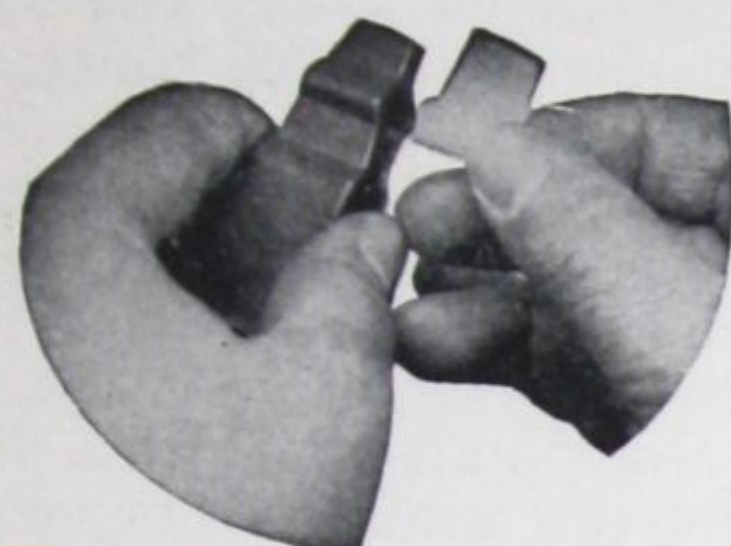
Fig. 1

(Photograph 720053)

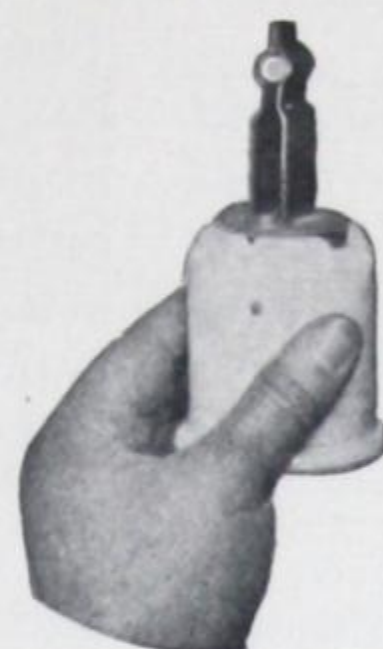
Assembled and disassembled view of lithographed tin can containing enclosed cutouts, showing method of shipment and typical recommendations according to lamp and transformer ratings

G-E FILM CUTOUTS

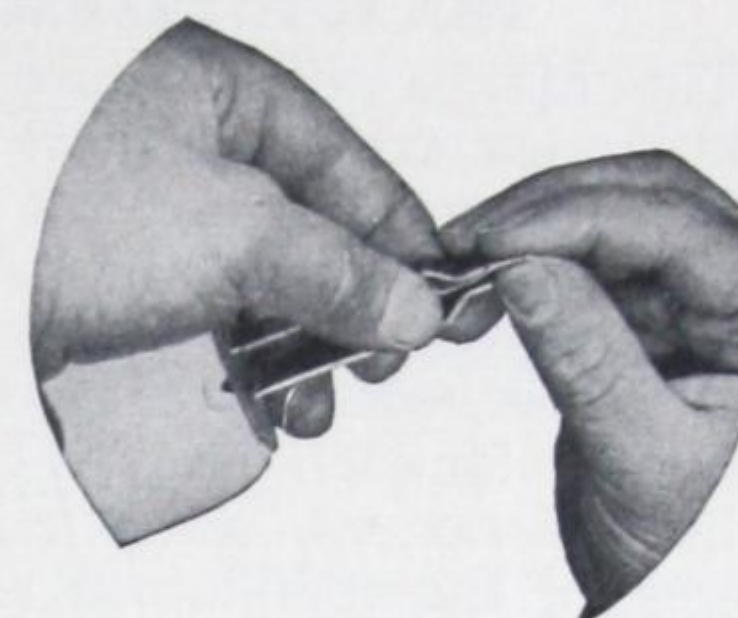
For Use with G-E Series Sockets on Series Incandescent Circuits



Magazine-film cutout being inserted in the clips

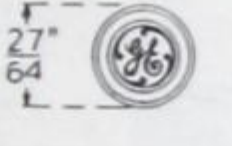
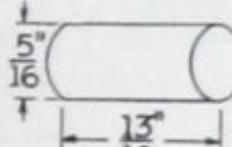


The standard series socket without change receives the magazine-film cutout



Spreading the socket clips to renew the film

Fig. 2
Method of installing magazine-film cutout

TYPE OF CUTOUT	DIMENSIONS	COLOR OF WASHER	PROBABLE LIMITS OF BREAKDOWN in Volts	CAT. NO.	LIST PRICE Class GO-51	STD PKG QTY	SHIP. WT in Std Pkg Oz	SUPERSEDED CAT. NO.
Enclosed Copper-oxide Disk		Brown Black Red	50 to 90 100 to 200 250 to 350	4815602G2 4815602G1 4815602G3	\$6.50 per 100 6.50 per 100 6.50 per 100	50 50 50	2 2 2	147969, 2331660 65951, 2331661
		Brown Black Red	50 to 90 100 to 200 250 to 350	4815920G2 4815920G1 4815920G3	6.50 per 100 6.50 per 100 6.50 per 100	50 50 50	1 1/2 1 1/2 1 1/2	
		Brown Black	50 to 90 100 to 200	4815603G2 4815603G1	6.50 per 100 6.50 per 100	100 100	1 1/2 1 1/2	
Magazine			100 to 250	15X729	.30 each	500	1/2	

FILM CUTOUT RECOMMENDATIONS

Note.—For best results recommend $\frac{9}{16}$ -in. cutouts for operation with lamps according to table below.
Where old style cutouts are specified without regard to lamp rating, order Cat. No. 4815920G1 which supersedes Cat. No. 65951 and 2331661; or Cat. No. 4815920G2 which supersedes Cat. No. 147969 and 2331660.

Table 1			Table 2						Table 3		
LAMP LUMENS	AMPERES	VOLTS	LAMP LUMENS	AMPERES	VOLTS	LAMP LUMENS	AMPERES	VOLTS	LAMP LUMENS	AMPERES	VOLTS
Dia. in In.	Cat. No. 4815602G1 Cat. No. 4815603G1 Cat. No. 4815920G1		Cat. No. 4815602G2 Cat. No. 4815603G2 Cat. No. 4815920G2			Cat. No. 4815602G3 Cat. No. 4815920G3					
$\frac{3}{4}$											
$\frac{27}{64}$											
$\frac{9}{16}$											
2500	4	41.1	600	4.0	10.5	1000	6.6	9.7	10000	5.5	102
4000	4	63.7	600	5.5	7.5	1000	7.5	8.5	10000	6.6	85
4000	5.5	43.3	600	6.6	6.5	2500	5.5	28.1			
4000	6.6	34.2	600	7.5	5.7	2500	6.6	22.3			
6000	6.6	49.9	800	4.0	13.7	2500	7.5	19.6			
6000	7.5	43.7	800	5.5	10.0	4000	7.5	30.3			
Δ15000	20	38.1	800	6.6	8.1	4000	15.0	15.1			
§25000	20	61.3	800	7.5	7.2	6000	20.0	15.9			
			1000	4.0	16.5	§ 10000	20.0	26.0			
			1000	5.5	11.9	π 15000	20.0	38.1			

Δ Operated without an IL transformer.
§ Operated with or without an IL transformer.
π Operated with an IL transformer.

G-E NOVALUX SERIES RECTANGULAR AUTOTRANSFORMERS

For Novalux Luminaires

FOR OPERATING (ONE) 15- OR 20-AMP SERIES LAMP FROM 60-CYCLE CONSTANT-CURRENT CIRCUIT

THE AUTOTRANSFORMER

The MAZDA series lamps of 4000, 6000, and 10,000 lumens are much more efficient when operated at 15 and 20 amperes than at any lower current value. Since most series alternating constant-current circuits are either 6.6 or 7.5 amperes, it is necessary to have an individual autotransformer for each lamp to be connected directly to the low-current series circuit to supply 15 amperes for the 4000-lumen lamp and 20 amperes for the 6000-, 10,000-, and 15,000-lumen lamps. Such a device is mounted directly under the hood of the Novalux unit and operates at an efficiency of 93 to 95 per cent with a power-factor of 99 per cent.

The autotransformer for the 6000-lumen lamp is equipped with a tap for a 4000-lumen lamp.

The autotransformer for the 10,000-lumen lamp has no tap for a 6000-lumen lamp. The 15,000-lumen size has a tap for the 10,000-lumen, both lamps burning on the same taps. This feature establishes the flexibility of the autotransformer type of unit and provides for the demand for more light which must come with the future.

The standard autotransformers are designed for operation at 6.6 and 7.5 amperes. At a slightly additional expense we can wind autotransformers to operate at any primary current from 3 to 10 amperes. The 4000-lumen lamp operates at 15 amperes, but the 6000-, 10,000-, and 15,000-lumen lamps operate at 20 amperes. For special frequencies, 25, 40, 125, or 133 cycles, special autotransformers should be provided.

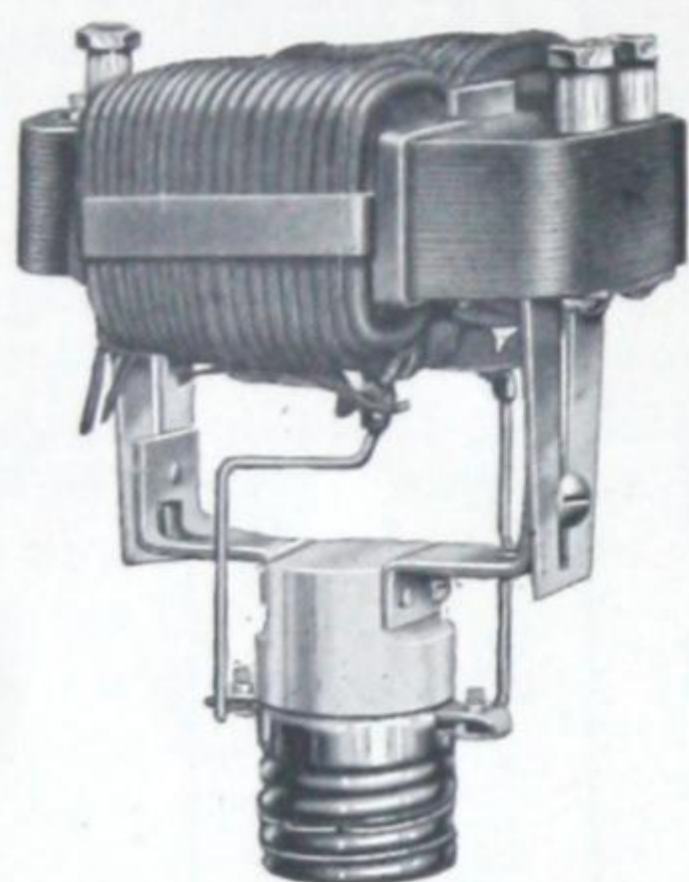


Fig. 1
(Photograph 268939)
Autotransformer with socket and support for Novalux unit

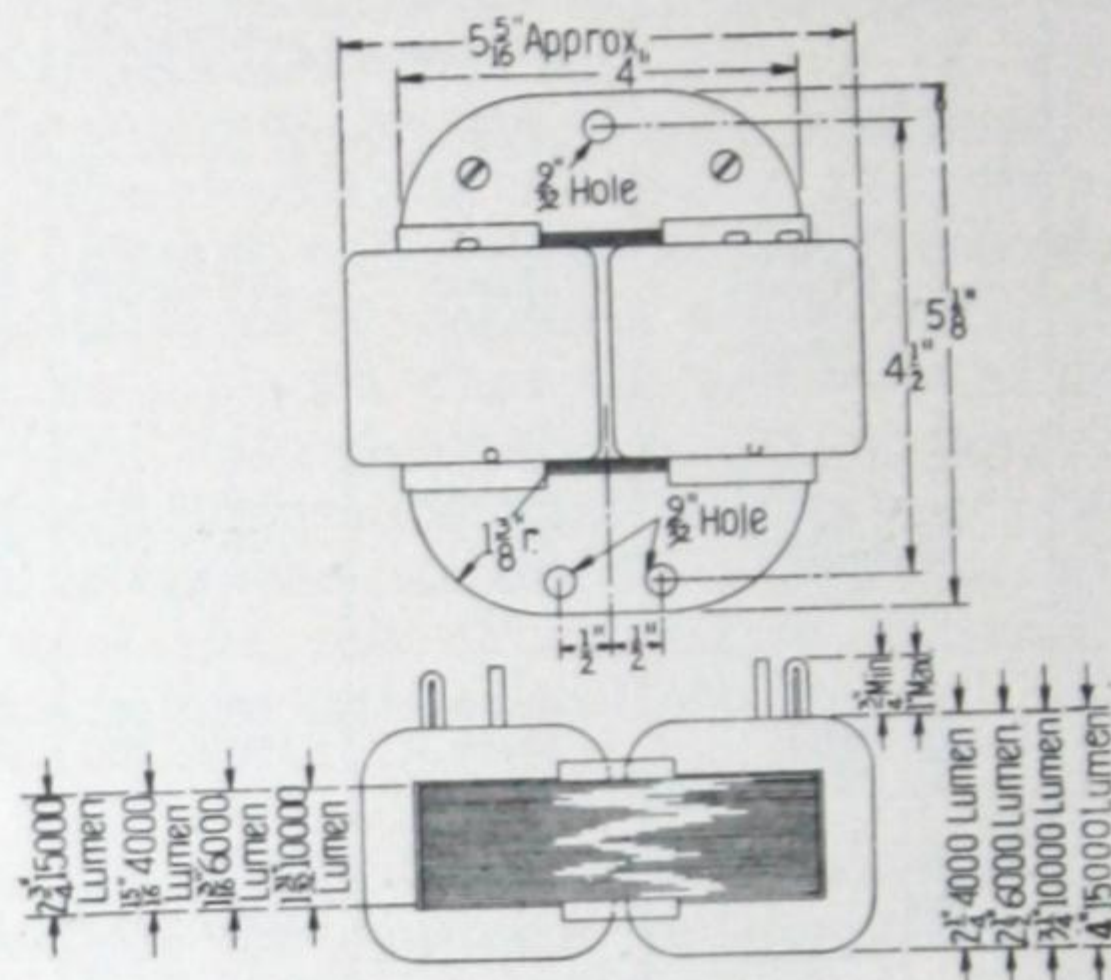


Fig. 2
Outline drawing for autotransformer in Novalux fixture

CAT. NO.	LAMP RATING		OPEN CIRCUIT EFFECTIVE VOLTAGE	LIST PRICE Class GO-51	APPROX EFFICIENCY in Per Cent	APPROX POWER-FACTOR in Per Cent
	Lumens	Amp				
6.6-AMPERE PRIMARY						
270549	4000	15	144	\$13.50	95.5	99
270550	4000/6000	15/20	137/198	16.50	93.8/94.6	99.5/99.8
270551	6000/10000	20	323	19.70	94.3	99.7/98
2X956	10000/15000	20	348/352	24.50	94.2/95.5	99/98.8
7.5-AMPERE PRIMARY						
270552	4000	15	116	\$13.50	94.5	99.6
270553	4000/6000	15/20	123/177	16.50	94.7/94.8	99.1/99.2
270554	6000/10000	20	285	19.70	94.4/95	99.3/99.8
2X957	10000/15000	20	310/320	24.50	94.2/95.5	98.7/98.7

For 50-cycle transformers, use same price as standard 60-cycle. Other special transformers can be furnished for any commercial current or frequency or on multiple circuits. Apply to nearest sales office.

Cat. No. and prices do not include socket and support. The 4000-lumen, 20-amp special lamp will operate on the 20-amp connection of the 4000-lumen transformers with regulation between $1\frac{1}{2}$ per cent plus and $1\frac{1}{2}$ per cent minus, when rated current and frequency is applied to primary winding.

G-E NOVALUX SERIES RECTANGULAR AUTOTRANSFORMERS

For Novalux Luminaires

CONNECTION DIAGRAMS FOR AUTOTRANSFORMERS

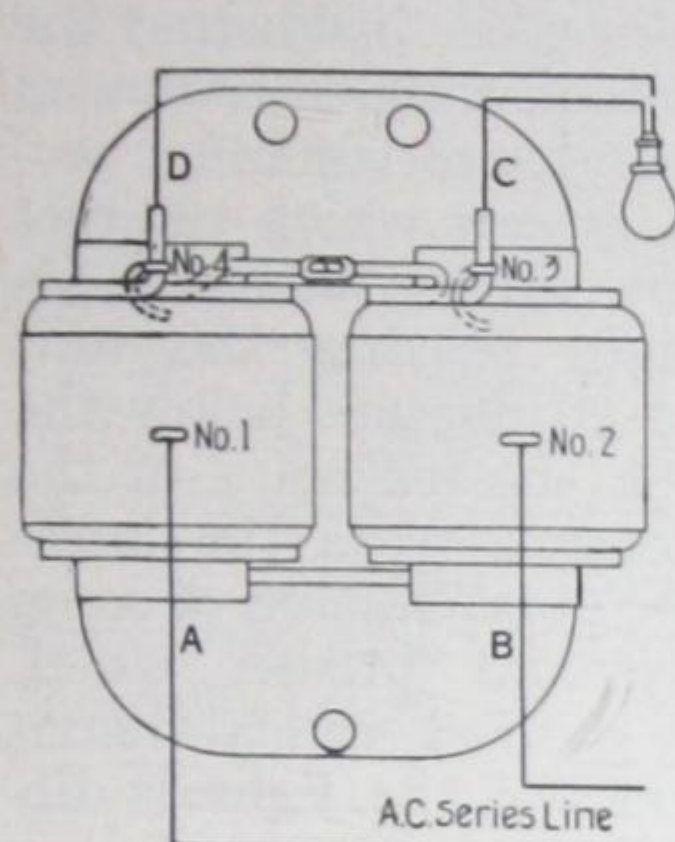


Fig. 3
Autotransformer for 4000-lumen lamp

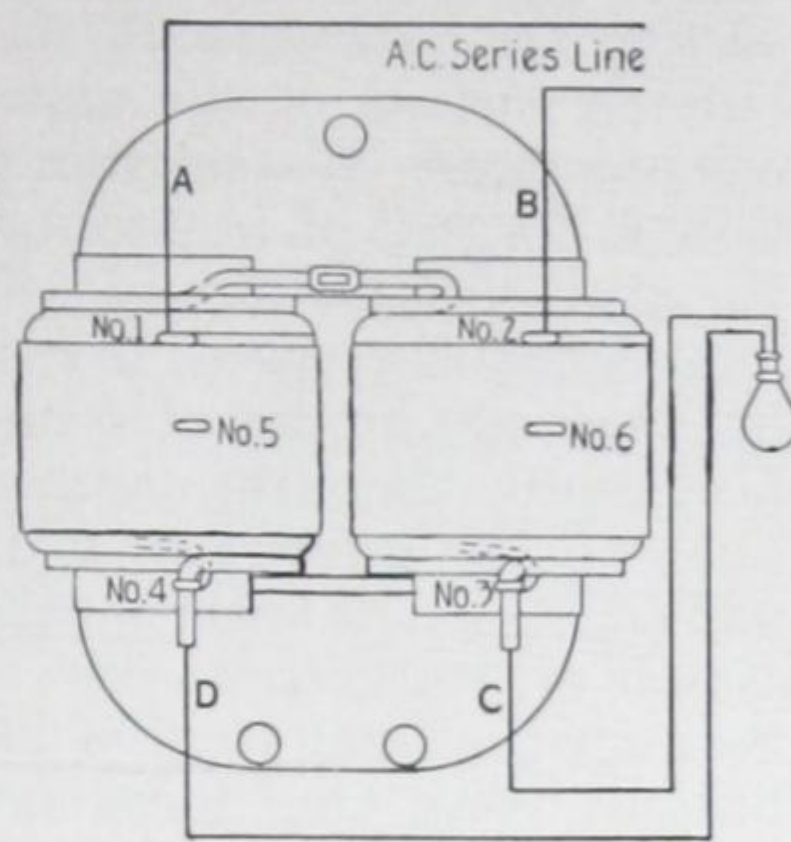


Fig. 4
Autotransformer for 6000-lumen lamp (with tap for 4000 lumen)

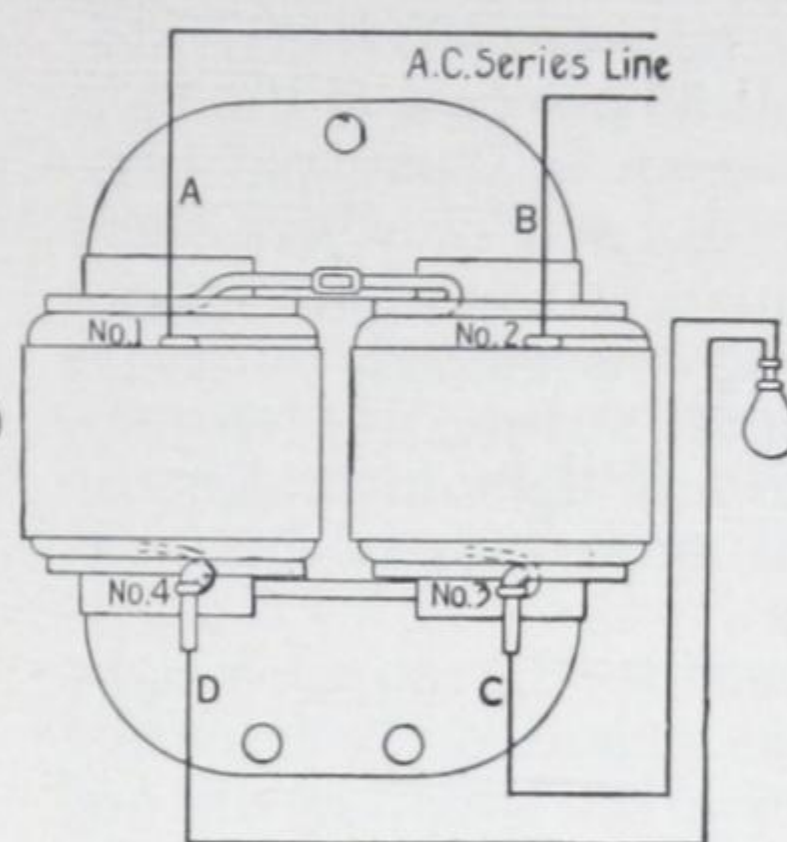


Fig. 5
Autotransformer for 10,000-lumen lamp (same connection for 6000 lumen)

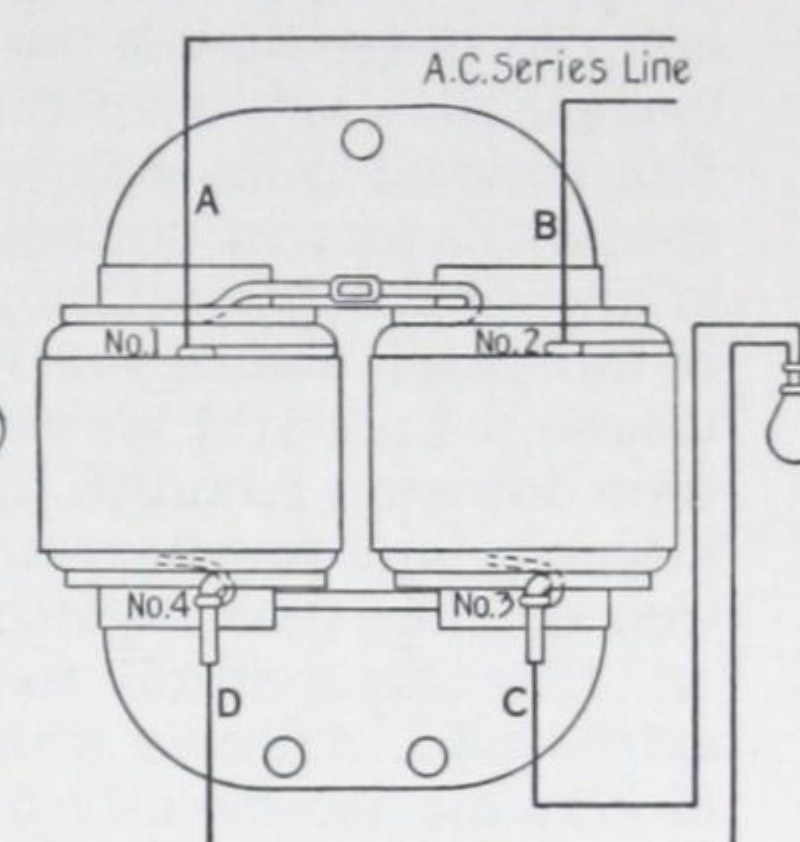


Fig. 6
Autotransformer for 15,000-lumen lamp (same connection for 10,000 lumen)

LUMEN OF LAMP	FIG. NO.	AMP OF CIRCUIT	VOLTS ON LAMP	CONNECTIONS			
				Connect Lead A to Tap	Connect Lead B to Tap	Connect Lead C to Tap	Connect Lead D to Tap
AUTOTRANSFORMER FOR 4000-LUMEN LAMP							
4000	3	15	14.8	1	2	3	4
AUTOTRANSFORMER FOR 6000-LUMEN LAMP (WITH TAP FOR 4000 LUMEN)							
6000	4	20	15.5	1	2	3	4
4000	4	15	14.8	5	6	3	4
AUTOTRANSFORMER FOR 10,000-LUMEN LAMP (SAME CONNECTION FOR 6000 LUMENS)							
10,000	5	20	25.9	1	2	3	4
6000	5	20	15.5	1	2	3	4
AUTOTRANSFORMER FOR 15,000-LUMEN LAMP (SAME CONNECTION FOR 10,000 LUMENS)							
15,000	6	20	37.6	1	2	3	4
10,000	6	20	25.9	1	2	3	4

GENERAL ELECTRIC HOLOPHANE REFRACTORS

APPLICATION

General Electric Holophane prismatic refractors are designed to be used with incandescent lamps to redirect the light flux emitted from the lamp in order that it may be more efficiently utilized on the roadway. About 50 per cent of the light flux emitted from a bare lamp is above the horizontal. Except in business districts or where there is an advantage in illuminating the upper stories of buildings, this upward light is wasted. For main thoroughfares and residential streets, the redirection downward of the upward light increases the intensity and improves the uniformity of illumination on the street surface.

The first efforts to utilize the upward light employed a reflector which increased the intensity of illumination directly below the lamp but did not improve the distribution of light or increase the intensity at a distance from the luminaires. To improve the uniformity and intensity, Holophane refractors were developed. These refractors redirect most of the upward light into a zone of about 10 to 20 degrees below the horizontal. Some types of refractors are designed to redirect a portion of the sidewalk-side light on to the street side as well as to redirect the upward light as described above.

CONSTRUCTION

General Electric Holophane refractors in the shapes of bowl, band, and dome are made of two

pieces of glass firmly held together in the proper mutual relation. Construction of these three types is, in general, the same. The inner surface of the inner section and the outer surface of the outer section are both smooth, making the inside and the outside surface of the assembled unit smooth and easy to clean. The outside surface of the inner section is formed of horizontal prisms which redirect the upward light flux to below the horizontal. This materially increases the light leaving the unit between the angles of 5 and 30 degrees below the horizontal, thereby increasing the intensity of the light on the ground at a distance from the luminaire. The inside surface of the outer section of some types of refractors has vertical prisms which redirect the light to give the desired conical distribution. With the dome refractor, the light is diffused and the glare thereby reduced by enclosing the refractor in a rippled alabaster globe.

The prisms on the refractors are necessarily small, so that a slight movement of the light source will materially affect the light distribution. To insure that the light center is set correctly, the refractors are equipped with peep-holes located diametrically. On each peep-hole are three lines representing settings of maximum candlepower of 70, 75, and 80 degrees. By sighting through the peep-holes and aligning the lamp filament with the correct lines, the light center may be set.

RELATIVE DISTRIBUTION CURVES

Distribution of Intensity of Light from Bare Lamp and Various Equipments in G-E No. 118 and No. 1118 Light Alabaster Rippled Glassware

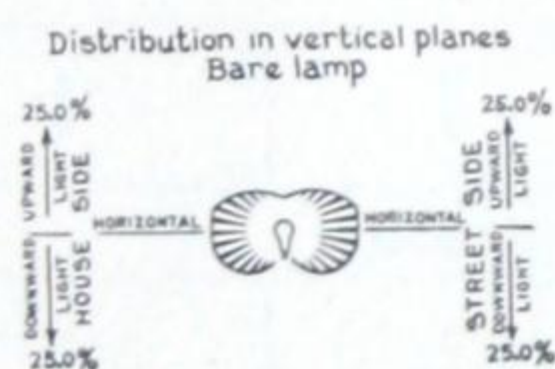


Fig. 1

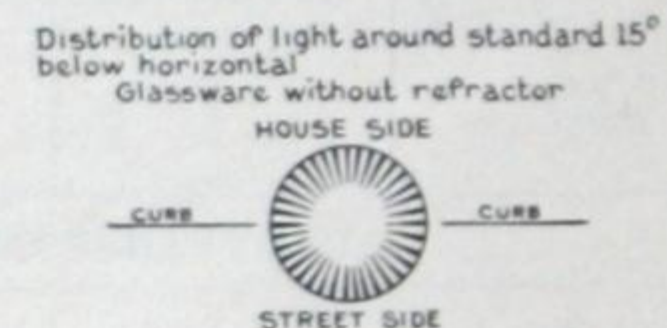
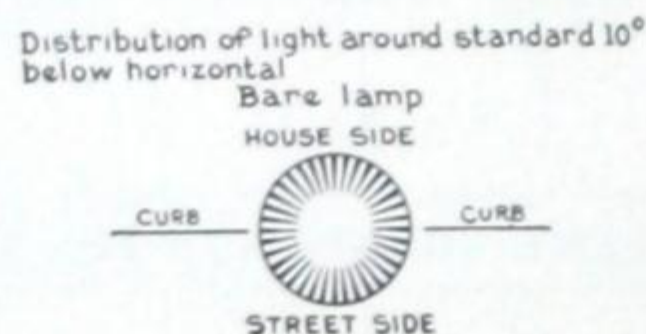


Fig. 2

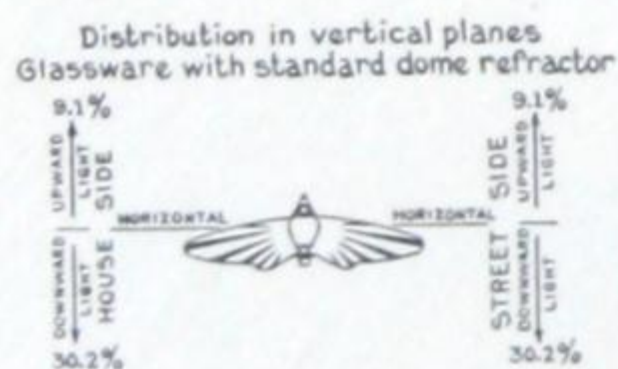


Fig. 3

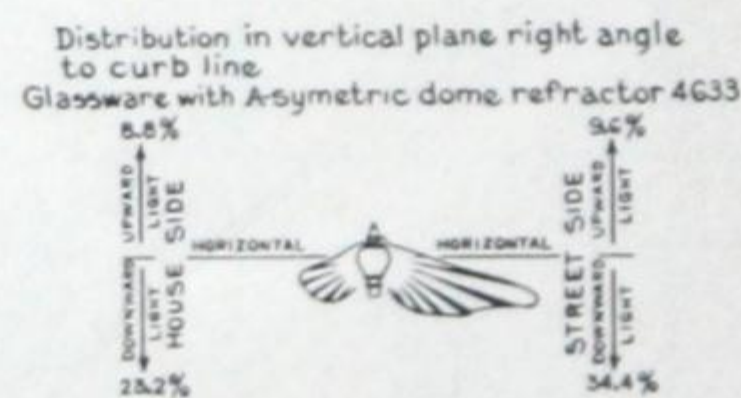
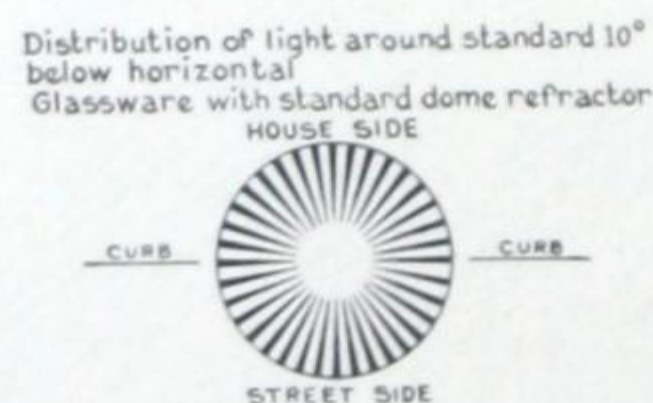


Fig. 4

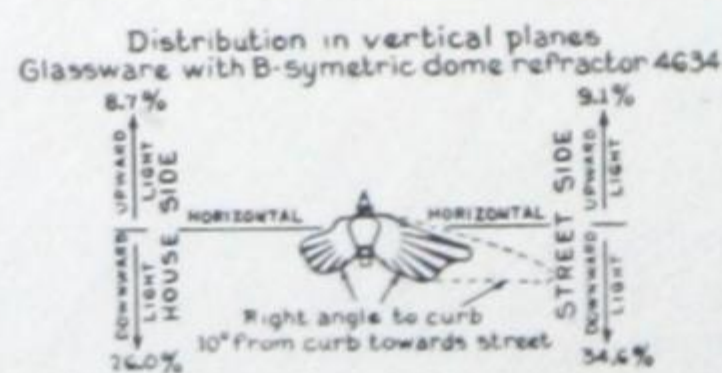


Fig. 5



GENERAL ELECTRIC HOLOPHANE REFRACTORS

ADVANTAGES

1. General Electric Holophane refractors conserve the light in the upper hemisphere, which for some classes of lighting is not required, and redirects it to the street surface where it will be useful.
2. The exposed surfaces of the refractors are smooth, making it simple to keep the refractors clean.
3. The three types of dome refractors used in General Electric units with enclosing glassware provide distribution to meet every application.
4. General Electric Holophane refractors have peep-holes to facilitate the correct setting of the light center.

DISTRIBUTION

Fig. 1 to 5 show a few of the distributions that it is possible to obtain with the standard General Electric Holophane refractors. The first distribution curve is that of a bare lamp (Fig. 1),

showing that 50 per cent of the emitted light flux is directed above the horizontal and 50 per cent below the horizontal. The conical curve shows that the light is distributed uniformly about the lamp. Enclosing the bare lamp in a diffusing globe does not materially alter the distribution of light from the luminaire but does decrease the glare. The SYM-ETRIC dome refractor redirects a large portion of the upward light and increases the intensity in the conical zone as shown on the curve (Fig. 3) and also increases the total light below the horizontal. The A-SYM-ETRIC dome refractor redirects the upward light in the same manner as the SYM-ETRIC dome refractor, but also a large portion of the light from the house side is redirected on the street side as is shown by a conical curve (Fig. 4). The B-SYM-ETRIC dome refractor (Fig. 5) is similar to the A-SYM-ETRIC dome refractor except that a greater percentage of the light is directed up and down the street to build up the intensity between luminaires.

BAND REFRACTOR

General Electric Holophane band refractors were designed primarily for use where a totally enclosed unit is not desired. The band refractor presents the first step in the construction of refractors. It permits the natural distribution of light from the bare lamp on the area directly beneath the unit but redirects most of the upward light into the lower hemisphere and concentrates the maximum candlepower at an angle

of from 10 to 20 degrees below the horizontal. The General Electric Holophane band refractors are available with outer section either ruby or amber to be used as signal indications for fire alarm or police.

Curves (Fig. 6 and 8) show light distribution from a Form 32 Novalux pendent unit with 8½-in General Electric Holophane band refractor, Cat No. 1327401, and 6000-lumen lamp.

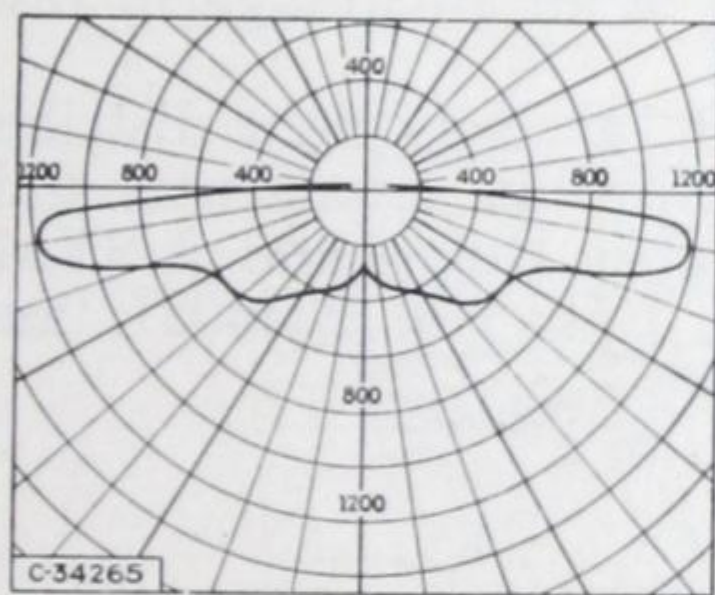


Fig. 6
Vertical plane



Fig. 7
(Photograph 265252)
Band refractor

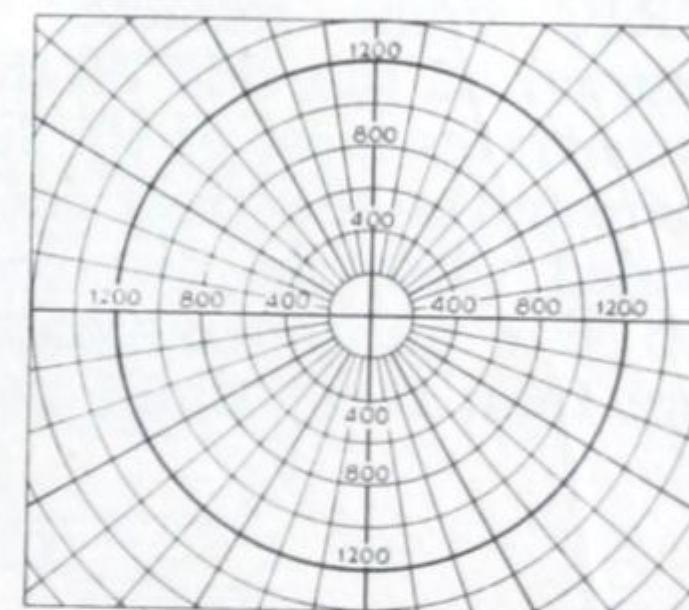


Fig. 8
Maximum cone
10 degrees below
horizontal

GENERAL ELECTRIC HOLOPHANE REFRACTORS

SYM-ETRIC DOME REFRACTOR

The General Electric Holophane SYM-ETRIC dome refractor is designed for use within an enclosing globe. This refractor provides a distribution similar to the band refractor by redirecting the upward light into the lower hemisphere. The maximum candlepower is from 10 to 20 degrees below the horizontal.

Light shields for attaching to all types of dome refractors are available. These shields reduce the light on the house side and are used in residential sections on luminaires which are troublesome to property owners.

Curves (Fig. 10 and 12) show light distribution from a Form 12 Novalux ornamental unit with 8½-in. General Electric Holophane SYM-ETRIC dome refractor, Cat. No. 1340228, and 6000-lumen lamp.



Fig. 9
(Photograph 477532)
Dome refractor
with light shield
on house side

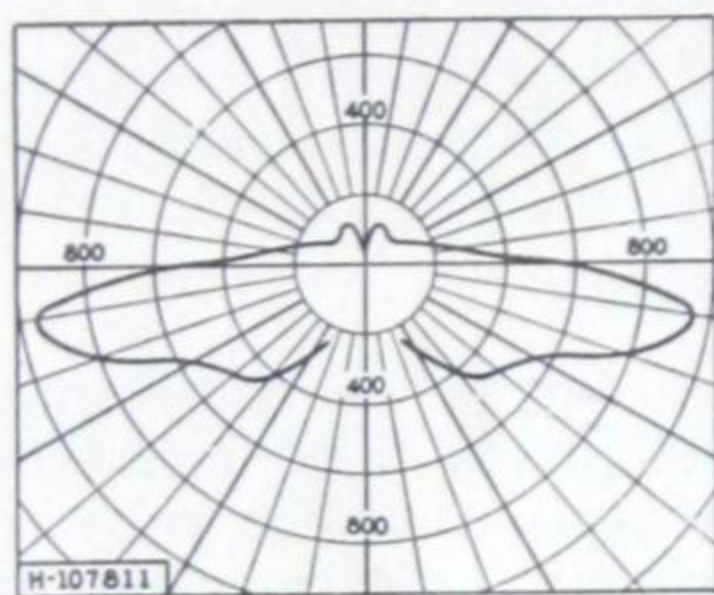


Fig. 10
Vertical plane



Fig. 11
(Photograph 483559)
SYM-ETRIC dome refractor

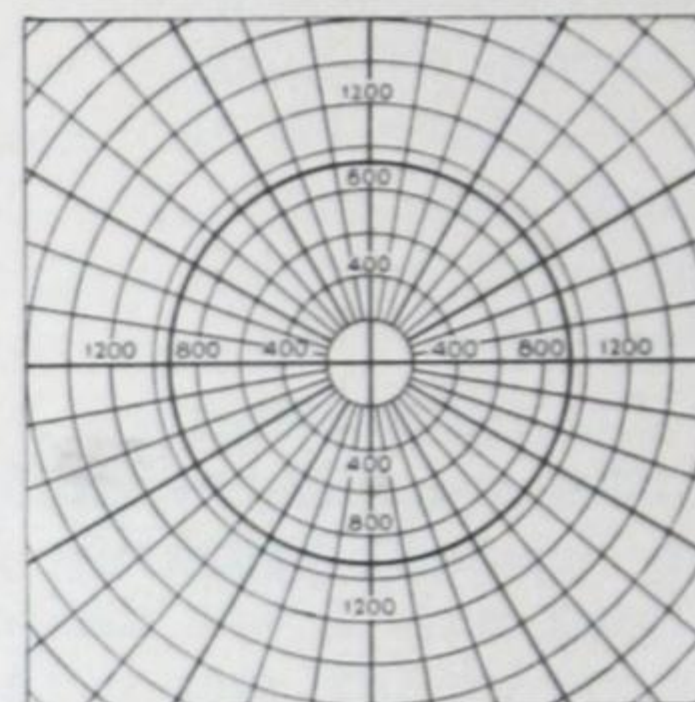


Fig. 12
Maximum cone
10 degrees below
horizontal

A-SYM-ETRIC DOME REFRACTOR

The General Electric Holophane A-SYM-ETRIC dome refractor is designed for units mounted at the side of the street. This refractor concentrates most of the light in the lower hemisphere and on the street side. This refractor is recommended when the distance from the unit to the curb line on the opposite side of the street is more than three times the mounting height. An

A-SYM-ETRIC dome refractor reduces the light on the house side, which is an advantage in residential districts.

Curves (Fig. 13 and 15) show light distribution from a Form 12 Novalux ornamental unit with 8½-in. General Electric Holophane A-SYM-ETRIC dome refractor, Cat. No. 2346021, and 6000-lumen lamp.

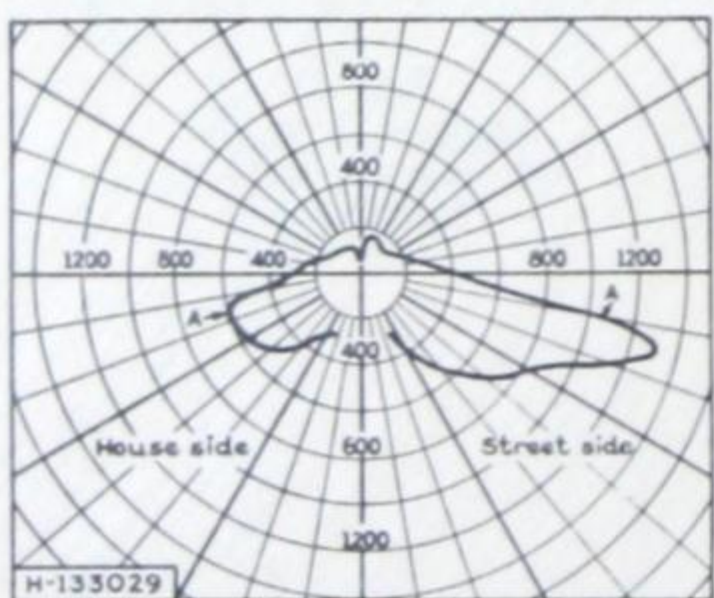


Fig. 13
Vertical plane at
right angle to curb



Fig. 14
(Photograph 483561)
A-SYM-ETRIC dome refractor

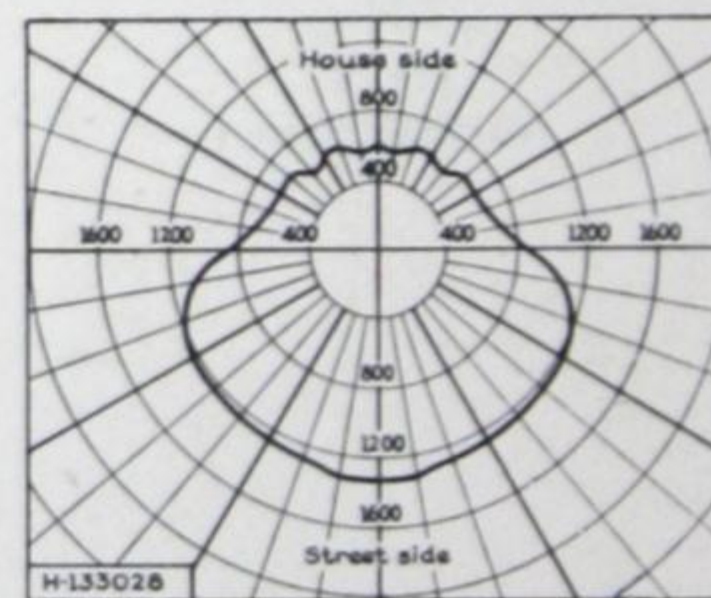


Fig. 15
Maximum cone
15 degrees below
horizontal

GENERAL ELECTRIC HOLOPHANE DOME REFRACTORS

B-SYM-ETRIC DOME REFRACTOR

The General Electric Holophane B-SYM-ETRIC dome refractor is designed for units mounted at the side of the street. This refractor concentrates most of the light in the lower hemisphere and on the street side. This refractor is recommended when the distance from the unit to the curb line on the opposite side of the street is less than three times the mounting height.

A B-SYM-ETRIC dome refractor reduces the light on the house side, which is an advantage in residential districts.

Curves (Fig. 16 and 18) show light distribution from a Form 12 Novalux ornamental unit with 8½-in. General Electric Holophane B-SYM-ETRIC dome refractor, Cat. No. 2346129, and 6000-lumen lamp.

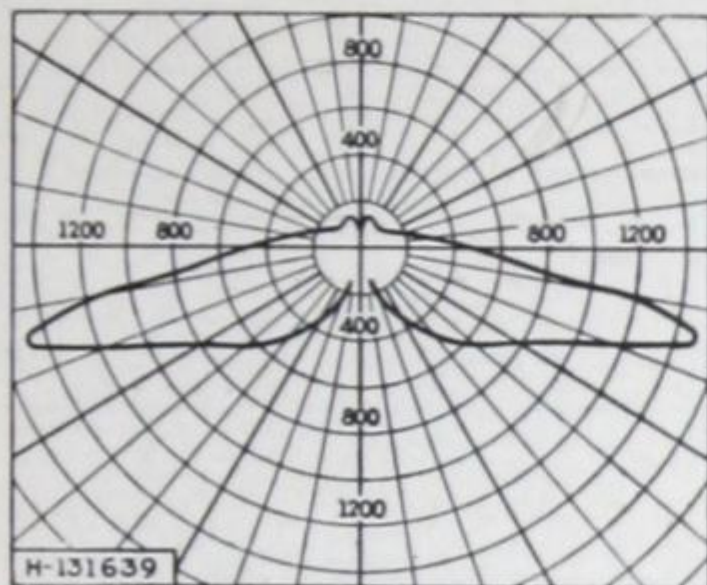


Fig. 16
Maximum vertical plane
10 degrees from curb line



Fig. 17
(Photograph 483558)
B-SYM-ETRIC dome refractor

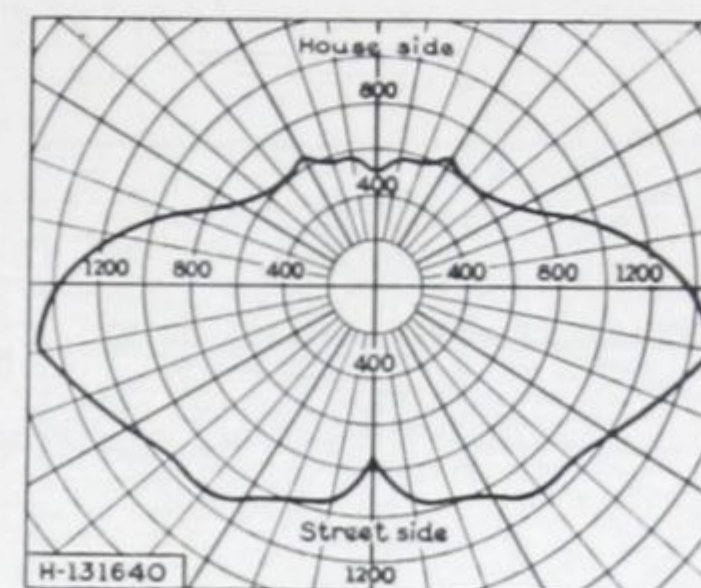


Fig. 18
Maximum cone
15 degrees below
horizontal

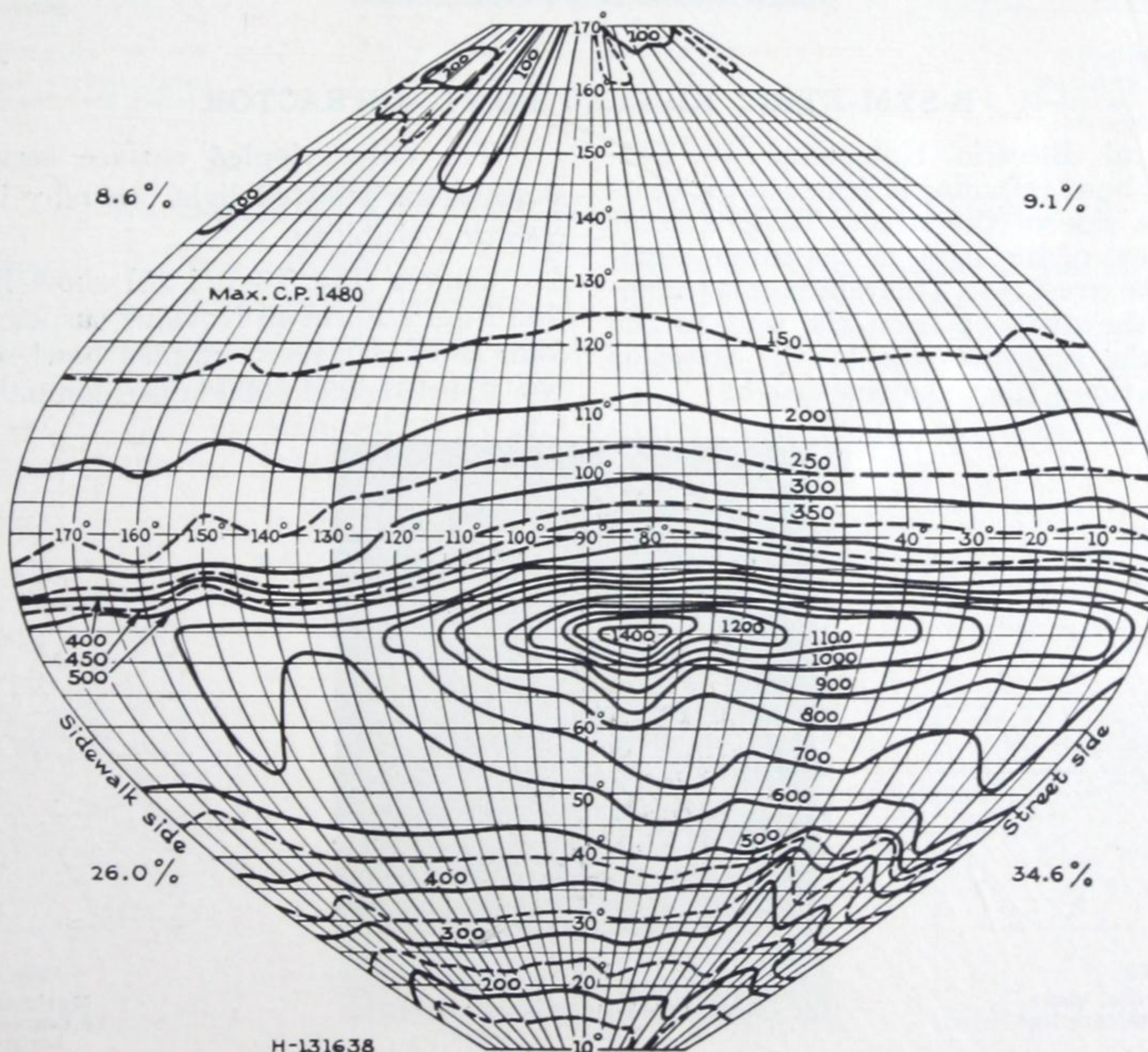


Fig. 19
Isocandle curve, Novalux luminaire with B-SYM-ETRIC dome refractor

GENERAL ELECTRIC HOLOPHANE REFRACTORS

SYM-ETRIC BOWL REFRACTOR

The General Electric Holophane SYM-ETRIC bowl refractor is designed for units mounted either over the center of the street or at the side of the street. This refractor directs most of the upward light into the lower hemisphere and concentrates the maximum candlepower at an angle of from 10 to 20 degrees below the horizontal. The General Electric Holophane SYM-ETRIC bowl re-

fractor is available with outer section either ruby or amber, to be used as signal indications for fire alarm or police.

Curves (Fig. 20 and 22) show light distribution from a Form 45 Novalux suspension unit with 8-in. SYM-ETRIC bowl refractor, Cat. No. 1340382, and 6000-lumen lamp.

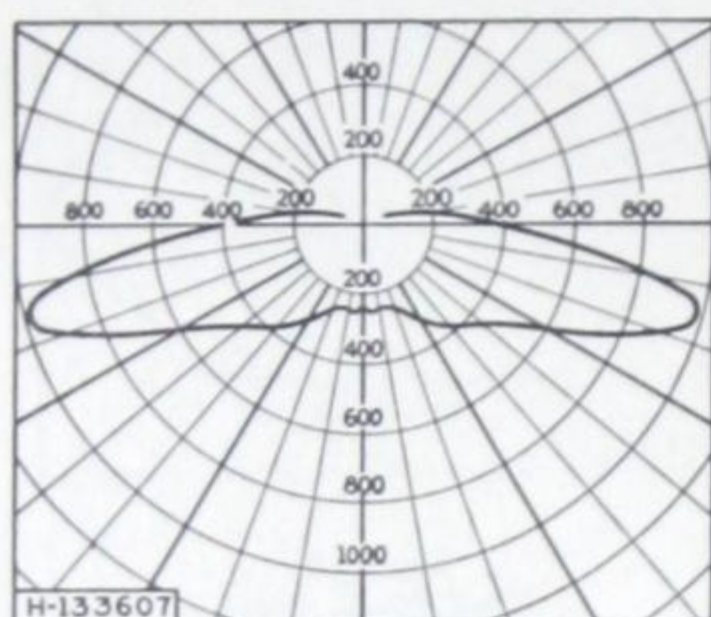


Fig. 20
Vertical plane



Fig. 21
(Photograph 719541)
SYM-ETRIC bowl refractor

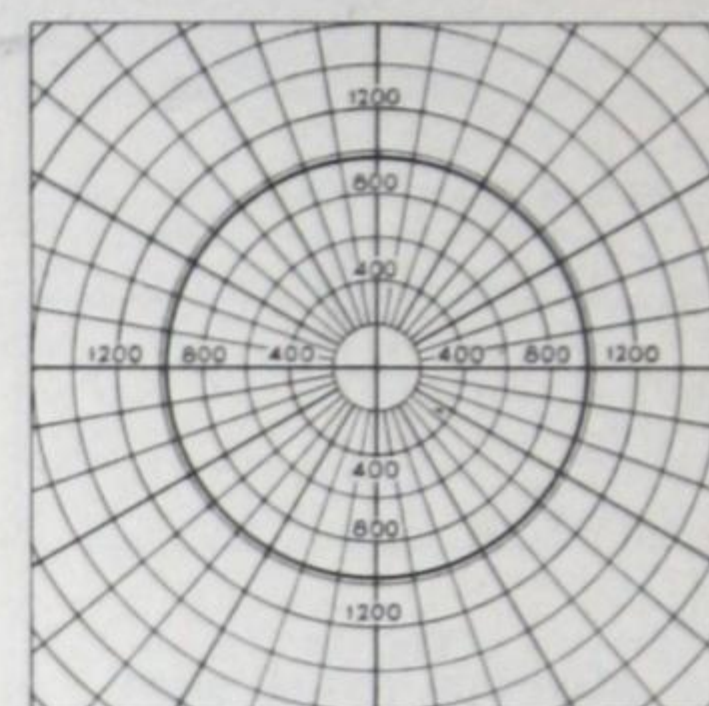


Fig. 22
Maximum cone
15 degrees below
horizontal

B-SYM-ETRIC RIPPLED BOWL REFRACTOR

The General Electric Holophane B-SYM-ETRIC rippled bowl refractor is designed for units mounted at the side of the street. This refractor concentrates most of the light in the lower hemisphere and on the street side. This refractor is recommended when the distance from the unit to the curb line on the opposite side of the street is less than three times the mounting height.

The outer rippled surface serves to diffuse slightly the emitted light, thereby improving the resulting visibility.

Curves (Fig. 23 and 25) show light distribution from a Form 45 Novalux suspension unit with 8-in. B-SYM-ETRIC rippled bowl refractor, Cat. No. 2346181, and 6000-lumen lamp.

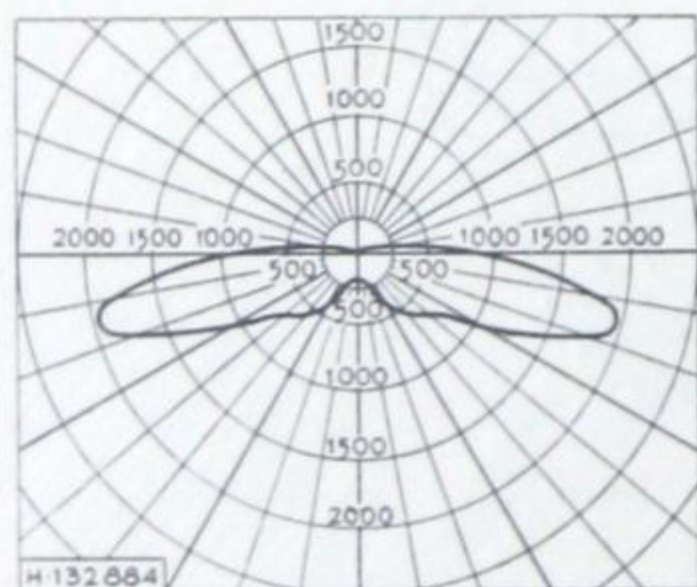


Fig. 23
Maximum vertical plane
15 degrees from curb line



Fig. 24
(Photograph 719541)
B-SYM-ETRIC rippled
bowl refractor

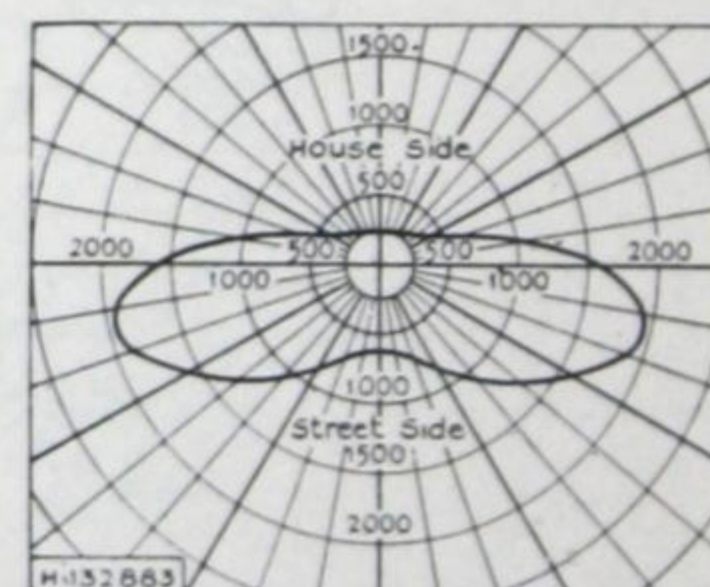


Fig. 25
Maximum cone
15 degrees below
horizontal

GENERAL ELECTRIC HOLOPHANE REFRACTORS

HI-WAY RIPPLED BOWL REFRACTOR

The General Electric Holophane Hi-way rippled bowl refractor is designed for units mounted at the side of the road. It redirects most of the upward and gutter-side light up and down the roadway.

This refractor differs from the B-SYM-ETRIC rippled bowl refractor in that the maximum candlepower in the 75-degree zone is 7.5 degrees out from the gutter line instead of 15 degrees. The vertical distribution of this refractor has a very sharp cut-off above the maximum candle-

power. The first mentioned change causes more light to be concentrated on the roadway, particularly on narrow highways and with high mounting heights. The maximum candlepower strikes the roadway so that it is cut off from the field of vision by the visor on a modern automobile. This materially lessens the glare.

Curves (Fig. 26 and 28) show light distribution from a Form 45 Novalux suspension unit with 8-in. Hi-way rippled bowl refractor, Cat. No. 3775699, and 4000-lumen lamp.

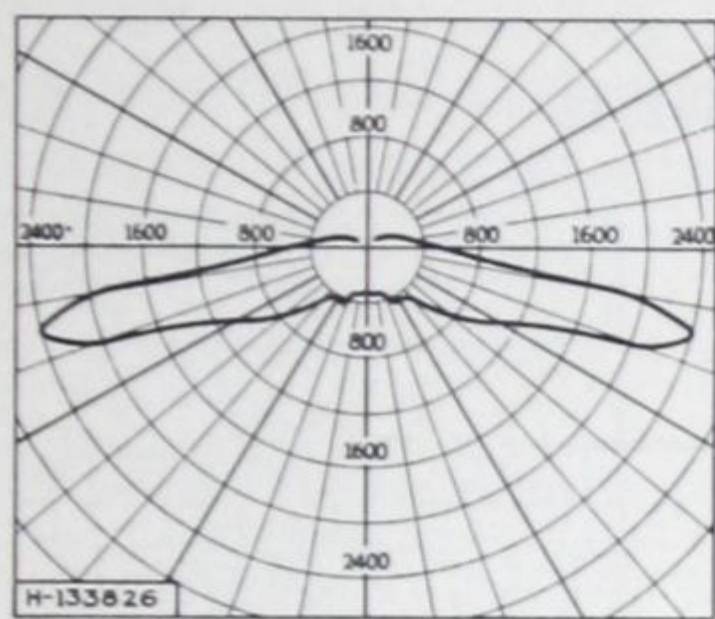


Fig. 26
Maximum vertical plane
7.5 degrees from gutter



Fig. 27
(Photograph 719541)
Hi-way rippled bowl
refractor

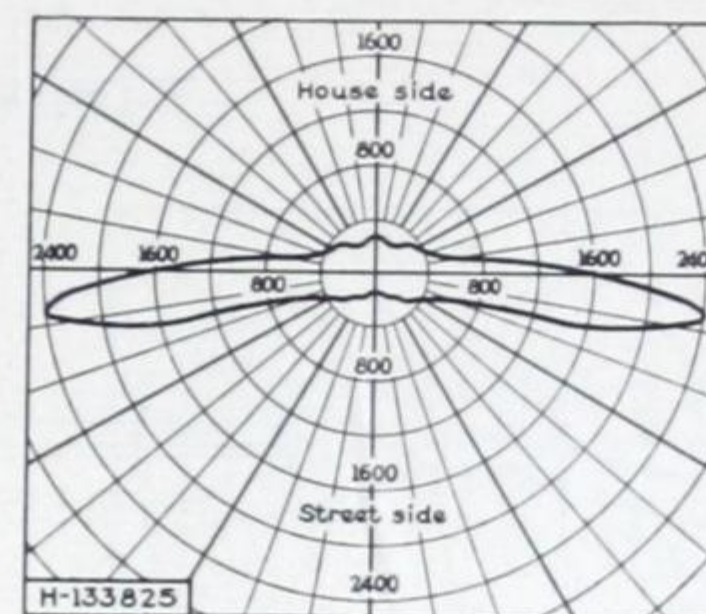


Fig. 28
Maximum cone
15 degrees below
horizontal

11-IN. B-SYM-ETRIC RIPPLED BOWL HI-WAY REFRACTOR

The General Electric Holophane 11-in. B-SYM-ETRIC rippled bowl Hi-way refractor is designed for units mounted at the side of the roadway. The 11-in. refractor accommodates a 10,000-lumen lamp and is used on wide highways and boulevards where 10,000-lumen lamps are desired

and where a distribution is desired that will direct light across a wide roadway.

Curves (Fig. 29 and 31) show light distribution from a Form 52 Novalux pendent unit with 11-in. General Electric Holophane B-SYM-ETRIC rippled bowl Hi-way refractor, Cat. No. 3775588, and 6000-lumen lamp.

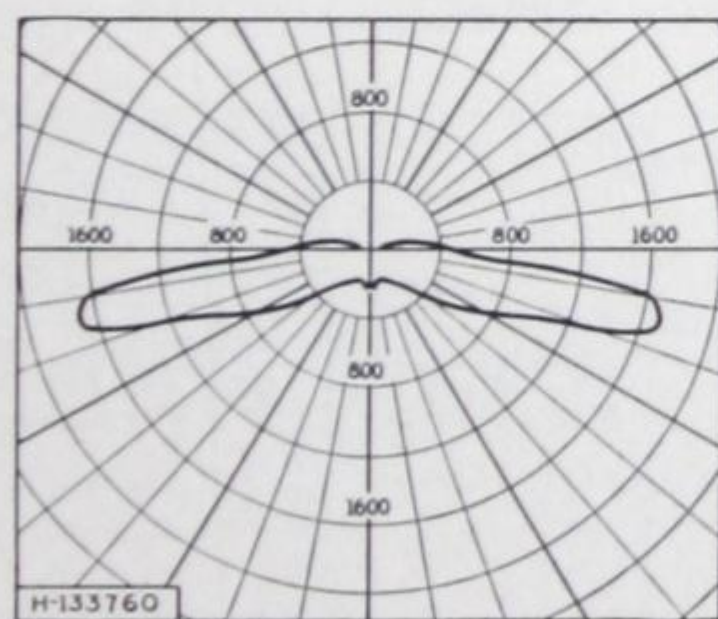


Fig. 29
Vertical plane
15 degrees from
curb line



Fig. 30
(Photograph 483560)
11-in. B-SYM-ETRIC Hi way
rippled bowl refractor

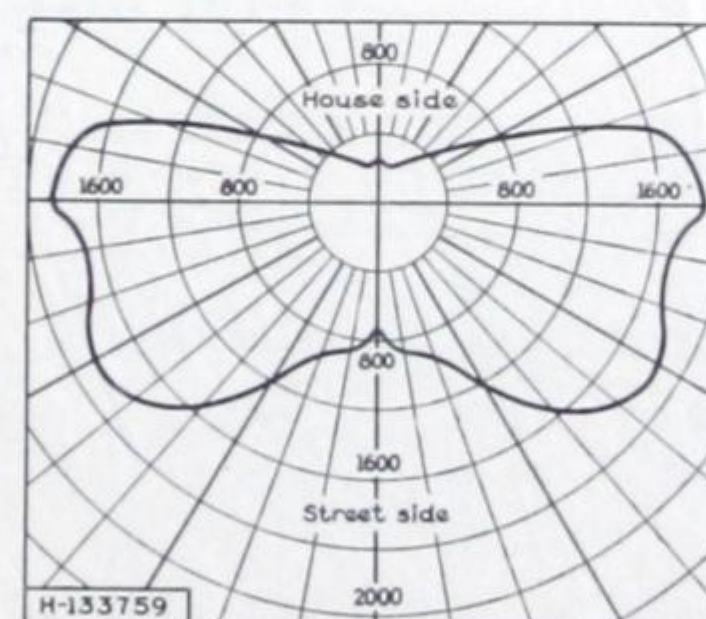


Fig. 31
Maximum cone
15 degrees below
horizontal

G-E HOLOPHANE REFRACTORS

HI-WAY REFRACTORS

Refractors are available for highway lighting to give any desired distribution. The curves (Fig. 32 to 39 inclusive) show the distributions of various

types of refractors on a Form 45 Novalux suspension unit with 2500-lumen lamp.

8-IN. TWO-WAY BOWL REFRACTOR, CAT. NO. 2322583

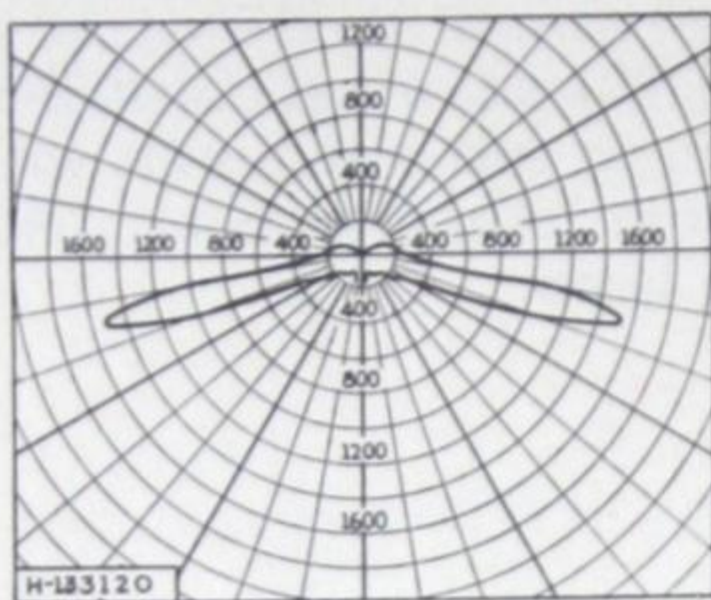


Fig. 32
Maximum vertical plane
through center line of
unit

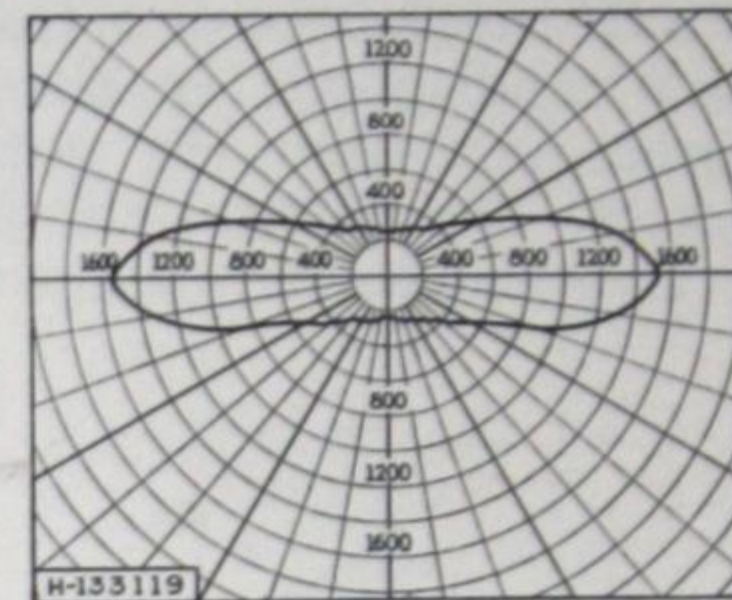


Fig. 33
Maximum cone 15 degrees
below horizontal

8-IN. FOUR-WAY BOWL REFRACTOR, CAT. NO. 2322582

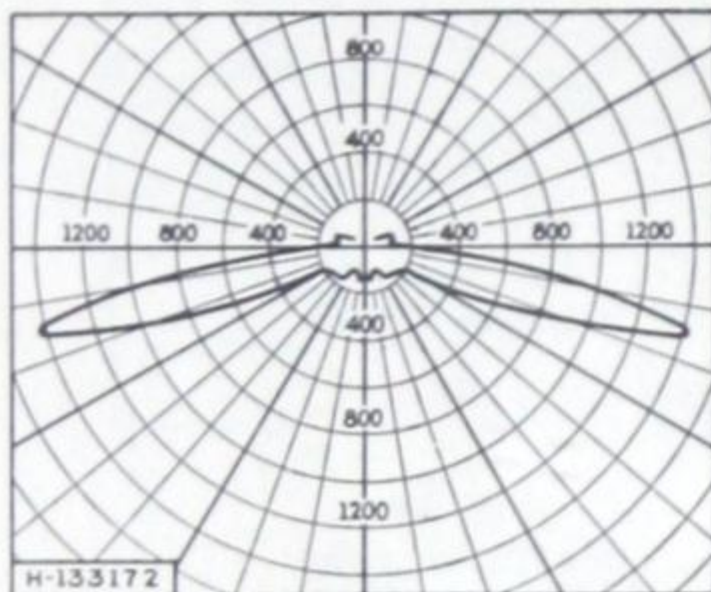


Fig. 34
Maximum vertical plane
through center line of
unit

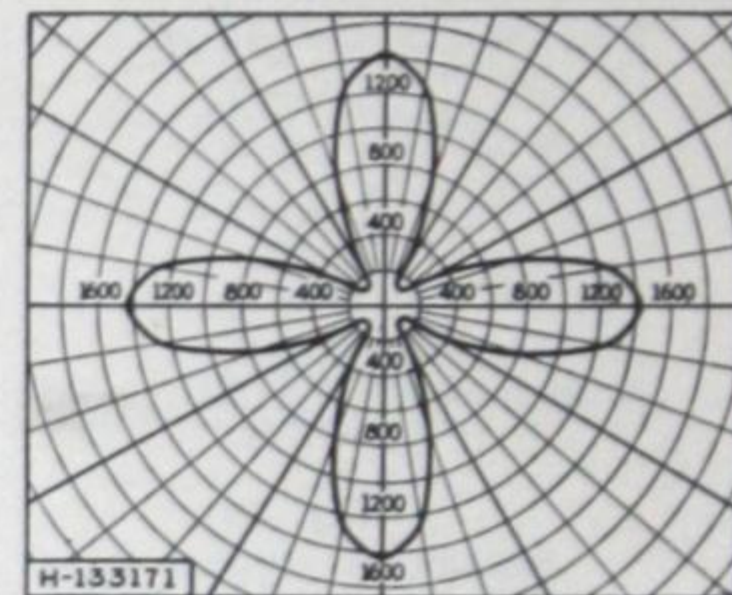


Fig. 35
Maximum cone 15 degrees
below horizontal

8-IN. HI-WAY NARROW-BEAM BOWL REFRACTOR, CAT. NO. 260509

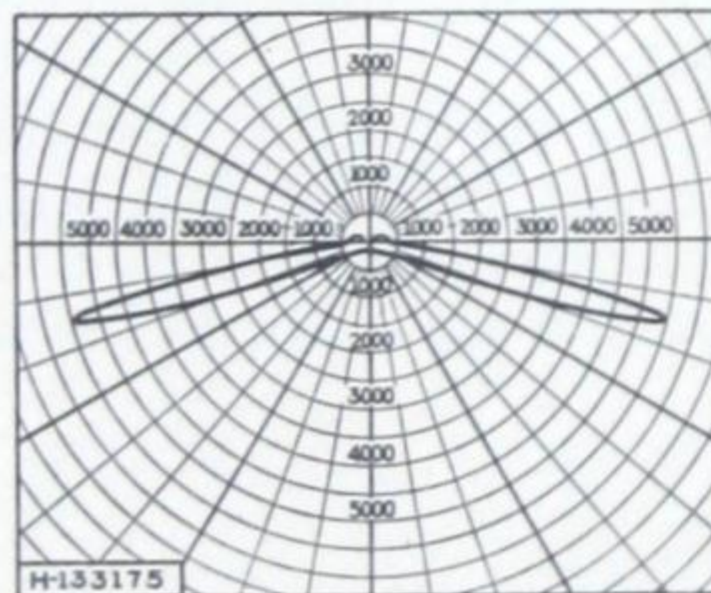


Fig. 36
Maximum vertical plane
3 degrees from curb line

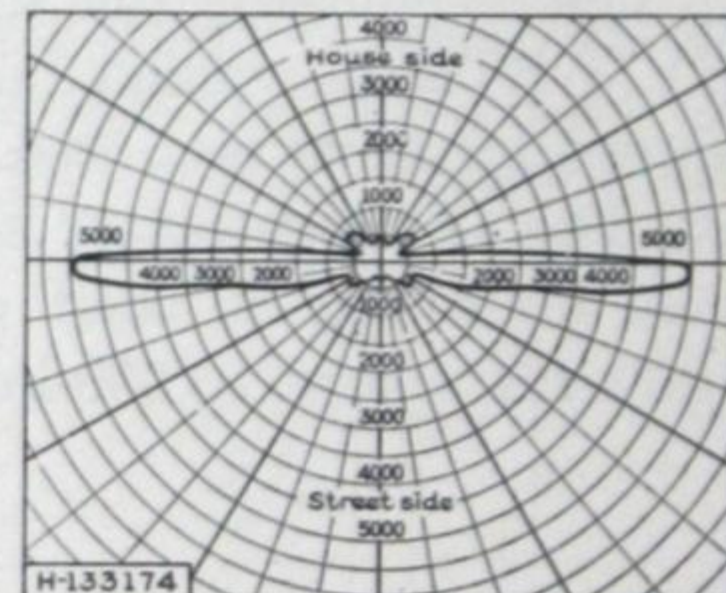


Fig. 37
Maximum cone 15 degrees
below horizontal

8-IN. HI-WAY WIDE-BEAM BOWL REFRACTOR, CAT. NO. 259402

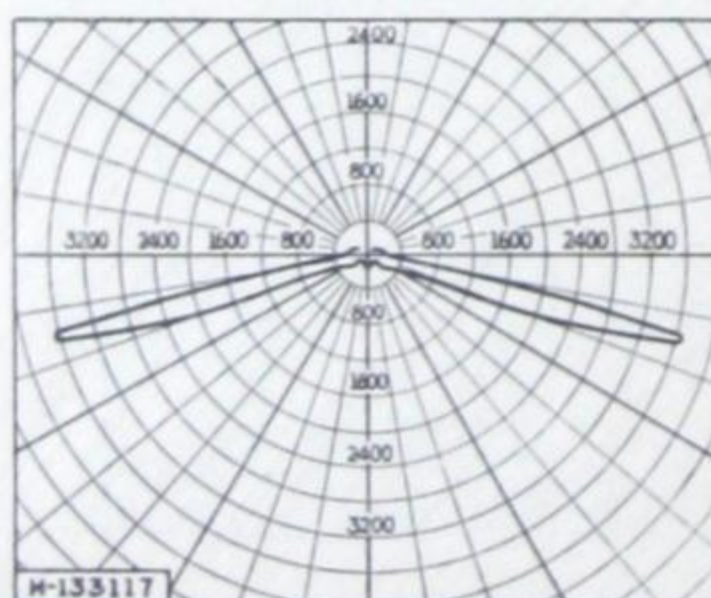


Fig. 38
Maximum vertical plane
8 degrees from curb line

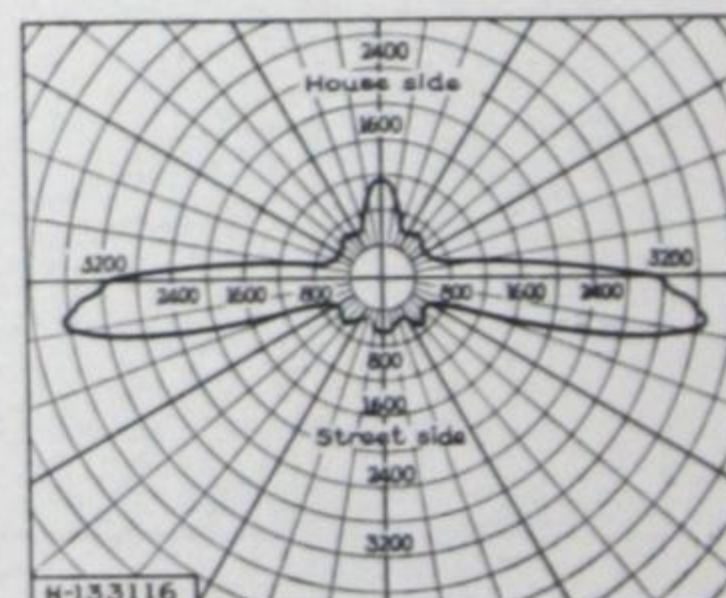


Fig. 39
Maximum cone 15 degrees
below horizontal

G-E HOLOPHANE REFRACTORS

GENERAL ELECTRIC REFRACTOR GAUGE

General Electric Holophane refractors are a series of accurate optical prisms designed to redirect the light flux emitted by the lamp to provide a given distribution. If the lamp filament is not correctly located, the distribution of light flux will not be as desired. To insure the correct filament setting and to facilitate making this setting with dome refractors, a refractor gauge has been developed. Fig. 40 shows the details of this gauge. An insulated mogul lamp base is screwed into the socket in the same manner as is a lamp. The bar and cross member have marks stamped upon them showing the correct setting for either 70-, 75-, or 80-degree maximum candlepower for 6½- and 7-in. light-center lamps. The desired angle is set opposite the desired light center. The refractor is then set on the refractor seat.

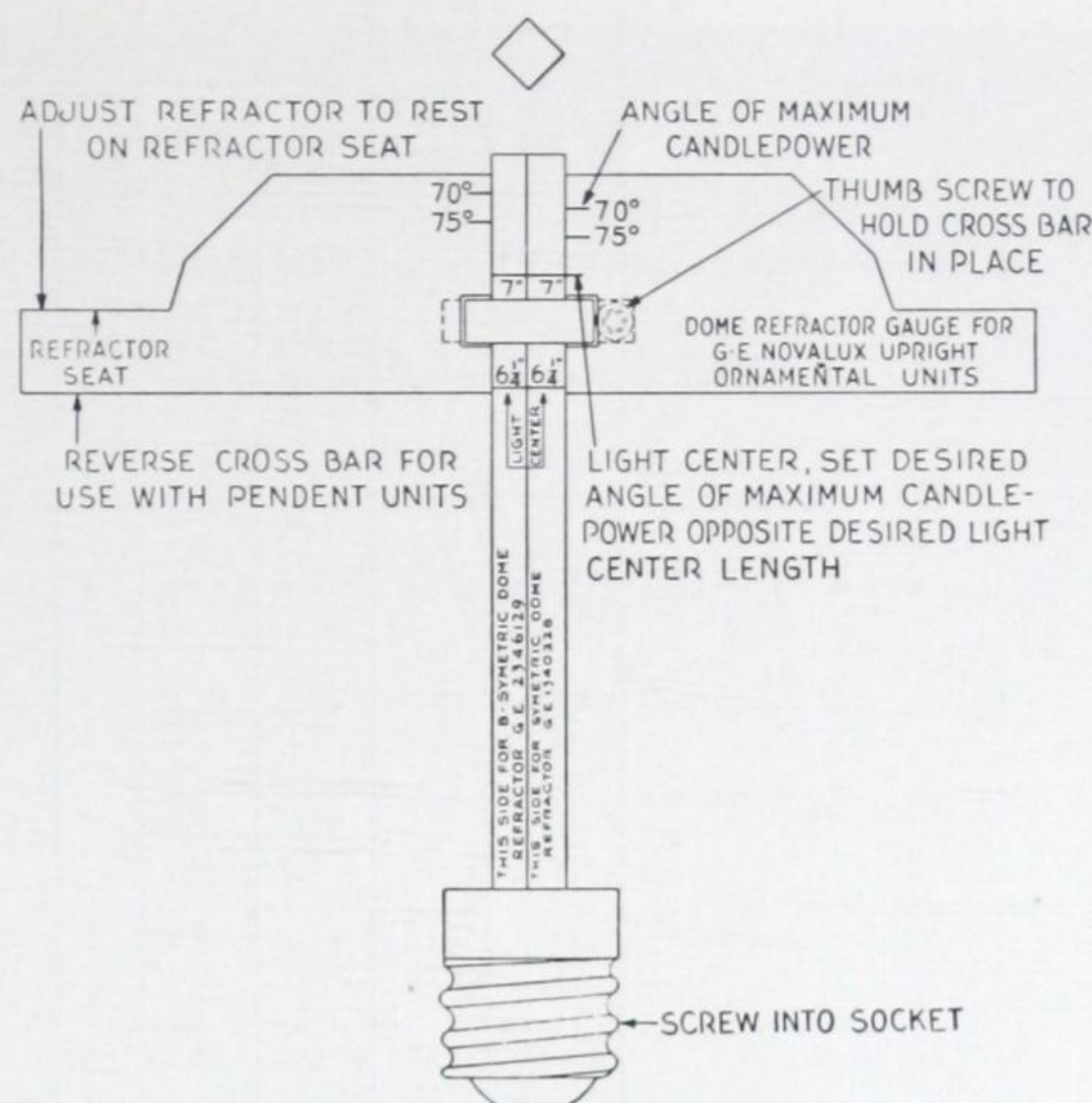


Fig. 40
Refractor gauge cross-bar in position for use with upright ornamental units

DESCRIPTION OF REFRACTOR	* G.E. CAT. NO.		HOLOPHANE CAT. NO.	LIST PRICE Class GO-51	STD PKG QTY	APPROX WT IN LB		FIG. NO.	DIMENSIONS IN INCHES					LARGEST SIZE LAMP THAT MAY BE USED
	New Cat. No.	Super-seded Cat. No.				Ship. Std Pkg	Net Each		Diam Over Flange A	Depth Over-all B	Depth of Flange C	Diam Under Flange D	Light-center Focus F	
Band														
††Small, 6 in.....	174271		4431	\$5.50	20	58	1.7	41	6½	2⅝	⅜	6	{ 80° 2¼ 75° 2⅝ 70° 2 }	1000-lumen
††Medium, 8 in.....	1327401	174274	4432	9.60	12	53	3.7	41	8½	3⅜	½	8	{ 80° 3¼ 75° 2⅝ 70° 2⅝ }	6000-lumen
†Medium, 8 in.—outer section ruby.....	2331568		4432-Ruby	13.30	12	53	3.7	41	8½	3⅜	½	8	{ 80° 3¼ 75° 2⅝ 70° 2⅝ }	6000-lumen
†Medium, 8 in.—outer section only—ruby....			4442-Ruby	9.40	15	70	1.9							
†Large, 10 in.....	1312160		4439	13.50	6	72	5.7	41	10½	4⅝	¼	10		1000-watt arc
†Large, 10 in. Outer section only....			4449	7.50	10	73	3.3							
†Large, 10 in. Inner section only....			4429	7.50	10	65	2.4							
Dome														
††SYM-ETRIC glass collar	1340228		4632	11.50	8	45	3.5	43	8½	4	9/16	5½	{ 80° ¾ 75° 5/8 70° ¾ }	300-watt 6000-lumen, 6.6-amp 6000-lumen 20-amp base-up position only
Δ††SYM-ETRIC metal collar	3775686		4631	11.50	8	46	3.6	43	8½	4	¾	5½	{ 80° 1½ 75° ¾ 70° 1 }	500-watt 15,000-lumen
Δ††A-SYM-ETRIC metal collar.....	2346021		4633	14.00	8	48	3.8	43	8½	4¾	¾	5½	{ 80° 1½ 75° ¾ 70° 1 }	500-watt 15,000-lumen
Δ††B-SYM-ETRIC metal collar.....	2346129		4634	14.00	8	50	4.0	43	8½	4¾	¾	5½	{ 80° 1½ 75° ¾ 70° 1 }	500-watt 15,000-lumen
Bowl														
†Small, 6 in.....	158432		4337	5.50	8	32	2.7	42	6½	5	⅜	6	{ 80° 2½ 75° 2¼ 70° 2¼ }	1000-lumen
†Medium, 8 in.—open base	158298		4238	11.50	4	35	6.3	42	8½	7⅝	½	8	{ 80° 3¼ 75° 3 70° 2¾ }	300-watt 6000-lumen
Medium, 8 in. open base—outer section ruby..	2346151		4238-Ruby	17.00	4	35	6.3	42	8½	7⅝	½	8	{ 80° 3¼ 75° 3 70° 2¾ }	300-watt 6000-lumen

GENERAL ELECTRIC HOLOPHANE REFRACTORS

DESCRIPTION OF REFRACTOR	* G.E. CAT. NO.		HOLOPHANE CAT. NO.	LIST PRICE Class GO-51	STD PKG QTY	APPROX WT IN LB		FIG. NO.	DIMENSIONS IN INCHES					LARGEST SIZE LAMP THAT MAY BE USED
	New Cat. No.	Super-seded Cat. No.				Ship. Std Pkg	Net Each		Diam Over Flange A	Depth Over-all B	Depth of Flange C	Diam Under Flange D	Light-center Focus F	
Bowl (Cont)														
††Medium, 8 in. closed base	1340382		4138	\$11.50	4	35	6.3	42	8½	7½	½	8	$\begin{Bmatrix} 80^{\circ} 3\frac{1}{4} \\ 75^{\circ} 3 \\ 70^{\circ} 2\frac{1}{4} \end{Bmatrix}$	300-watt 6000-lumen
†Medium, 8 in. closed base—outer section ruby..	2346150		4138-Ruby	17.00	4	35	6.3	42	8½	7½	½	8	$\begin{Bmatrix} 80^{\circ} 3\frac{1}{4} \\ 75^{\circ} 3 \\ 70^{\circ} 2\frac{1}{4} \end{Bmatrix}$	300-watt 6000-lumen
†Medium, 8 in.—outer section only, ruby....			4248-Ruby	11.30	10	78	3.3							
†Medium, 8 in.—two-way.	2322583		4376	11.80	4	37	7		8½	7½	½	8	$\begin{Bmatrix} 80^{\circ} 3\frac{1}{4} \\ 75^{\circ} 3 \\ 70^{\circ} 2\frac{1}{4} \end{Bmatrix}$	300-watt 6000-lumen
†Medium, 8 in.—four-way	2322582	259401	4375	11.80	4	35	7		8½	7½	½	8	$\begin{Bmatrix} 80^{\circ} 3\frac{1}{4} \\ 75^{\circ} 3 \\ 70^{\circ} 2\frac{1}{4} \end{Bmatrix}$	300-watt 6000-lumen
Medium, 8 in.—four-way—outer section ruby..			4375-Ruby	17.50	4	35	7		8½	7½	½	8	$\begin{Bmatrix} 80^{\circ} 3\frac{1}{4} \\ 75^{\circ} 3 \\ 70^{\circ} 2\frac{1}{4} \end{Bmatrix}$	300-watt 6000-lumen
†Medium, 8 in. B-SYMETRIC rippled bowl..	2346181		4173	17.30	8	105	8.8		8½	9	½	8	$\begin{Bmatrix} 80^{\circ} 3\frac{1}{4} \\ 75^{\circ} 3 \\ 70^{\circ} 2\frac{1}{4} \end{Bmatrix}$	300-watt 6000-lumen
Inner section only....			4163	9.50	8	75	4.0							
Outer section only....			4183	9.50	8	80	7.8							
Hi-way														
††Medium, 8 in.....	3775699		4170	17.30	8	105	8.8		8½	9	½	8	$\begin{Bmatrix} 80^{\circ} 3\frac{1}{4} \\ 75^{\circ} 3 \\ 70^{\circ} 2\frac{1}{4} \end{Bmatrix}$	300-watt 6000-lumen
†Medium, 8 in.—wide beam.....	259402		4378	19.00	8	105	7.5		8½	7½	½	8	$\begin{Bmatrix} 80^{\circ} 3\frac{1}{2} \\ 75^{\circ} 2\frac{7}{8} \\ 70^{\circ} 2\frac{5}{8} \end{Bmatrix}$	300-watt 6000-lumen
††Large, 11 in. B-SYMETRIC rippled bowl, clear.....	3775588		4178	25.90	1	21	17.5		11¼	11	½	11¼	$\begin{Bmatrix} 80^{\circ} 3\frac{3}{8} \\ 75^{\circ} 3\frac{3}{8} \\ 70^{\circ} 3 \end{Bmatrix}$	500-watt 10,000-lumen
†Large, 11 in. B-way, satin finish.....	3778146		4177-SF	25.90	1	21	17.5		11¼	11	½	11¼	$\begin{Bmatrix} 80^{\circ} 3\frac{3}{8} \\ 75^{\circ} 3\frac{3}{8} \\ 70^{\circ} 3 \end{Bmatrix}$	500-watt 10,000-lumen
†Large, 11 in. B-way, velvet finish.....			4177-VF	25.90	1	21	17.5		11¼	11	½	11¼	$\begin{Bmatrix} 80^{\circ} 3\frac{3}{8} \\ 75^{\circ} 3\frac{3}{8} \\ 70^{\circ} 3 \end{Bmatrix}$	500-watt 10,000 lumen
†Large, 11 in. symmetric, clear.....	3778147		4333	20.20	3	80	15		11¼	10	½	11¼	$\begin{Bmatrix} 80^{\circ} 3\frac{3}{8} \\ 75^{\circ} 3\frac{3}{8} \\ 70^{\circ} 3 \end{Bmatrix}$	500-watt 10,000 _l lumen
†Large, 11 in. symmetric velvet finish.....	3778148		4333-VF	20.20	3	80	15		11¼	10	½	11¼	$\begin{Bmatrix} 80^{\circ} 3\frac{3}{8} \\ 75^{\circ} 3\frac{3}{8} \\ 70^{\circ} 3 \end{Bmatrix}$	500-watt 10,000-lumen
§Refractor gauge.....	4802302G1			3.00	1									

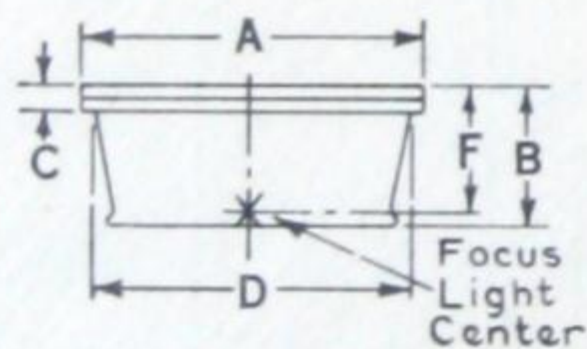
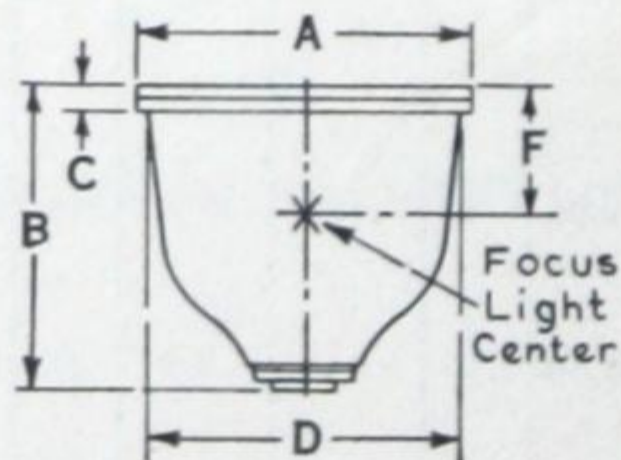
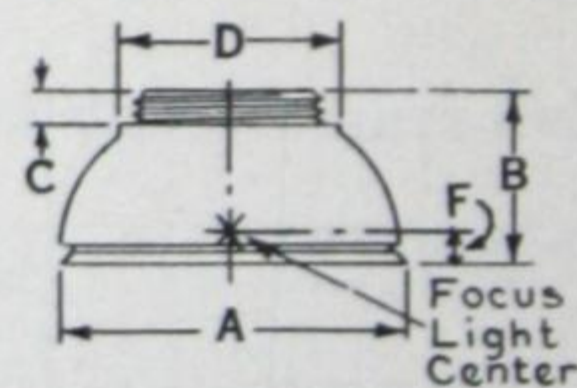
* Always order by G-E catalog number.

† To be sold for G-E Novalux units only.

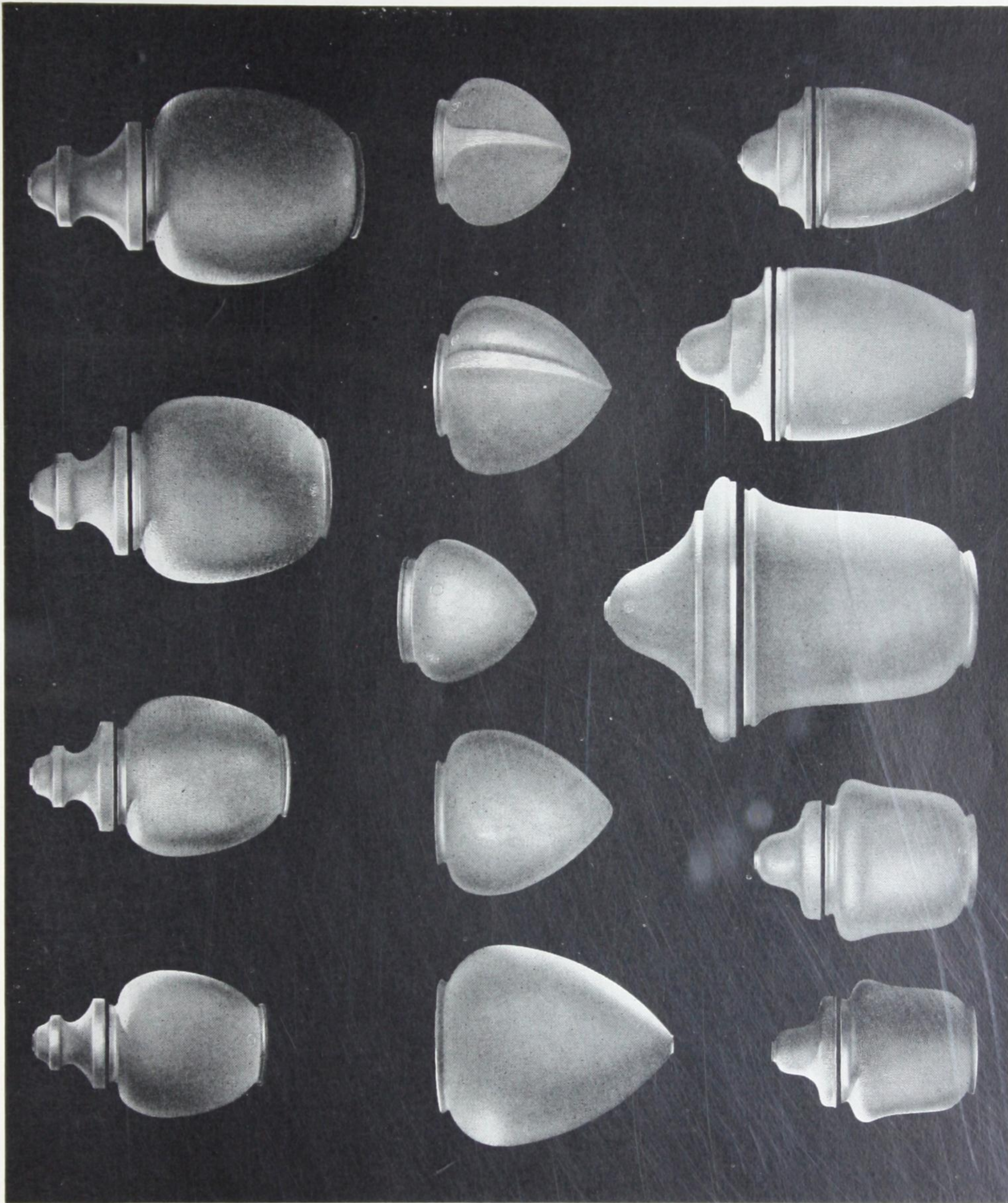
‡ The list price of either the inner or outer half of these refractors is 55 per cent of the list price given for the complete refractor.

§ Order refractor gauges from Lynn River Works.

△For refractor equipped with light shield on house side, add \$4.80 to list price.

Fig. 41
Band refractorFig. 42
Bowl refractorFig. 43
Dome refractor

G-E STREET-LIGHTING GLASSWARE



G-E STREET-LIGHTING GLASSWARE

The satisfaction given by an installation of street lighting depends to a great extent upon the type of glassware used. There are many factors



Fig. 1
Removing the glass globule from the furnace
after about four gatherings

entering into the choice of street-lighting glassware, to give the highest efficiency and best illumination results, together with the best day and night appearance. Following are described some of the reasons for the excellence of G-E glassware.

FORM

General Electric glassware is constructed for architectural beauty as well as utility. The globes are artistically designed to harmonize with the ornamental standards or brackets on which they are mounted. Various kinds of glass are available so that at least one can be found which is exactly applicable to the given set of conditions. Globes must present an artistic appearance in the daytime when they are seen as only a part of the lighting fixture; while at night, when they become centers of interest, they must create an equally good impression.

SURFACE TEXTURE

Rippled glassware, a General Electric development, gives an incandescent light source the appearance of sparkling light. The small irregular vertical ridges break up the globe surface into spots of brightness and semibrightness, which seem to alternate as one passes by when the lamp is in operation. This gives a sparkle to the unit that is entirely lacking when a plain globe is used. Through the co-operation of physicists, experts in light, this highly desirable effect has been produced.

DIFFUSION

The concealment of the glaring light source has been accomplished in two ways. The original method used translucent glass completely hiding the lamp, and making the globe a secondary light source devoid of glare. The newer method of rippled glassware conceals the light source behind a sparkling wall having a generally soft texture with central points of high brilliancy spread over a considerable area. The irregular form of the ripples prevents the appearance of any fixed geometric pattern and produces a highly interesting effect.

MAINTENANCE

The careful manufacturing process to which all G-E glassware is subjected insures the globe against breakage from any sudden temperature change, and against ordinary shock resulting from careless handling. The arrangement of the ripples in a generally vertical direction leaves no horizontal flat surfaces on which dirt may collect. An occasional rain serves to keep the globes fairly clean. When water is poured over the globe in order to clean it, the dirt is washed away by the minute streams that form in the troughs of the ripples, and thus the whole surface is cleansed, as the water cannot pick its path of descent. Should this method be considered insufficient and a brush deemed necessary, the bristles of the brush will concentrate in the depressions between the ripples, and so will readily remove the dirt. The ripples also conceal any streaks left by water when running off the globe and that might show on the surface of smooth glass.



Fig. 2
Smoothing the outside surface of the glass globule
with wooden forms

G-E STREET-LIGHTING GLASSWARE

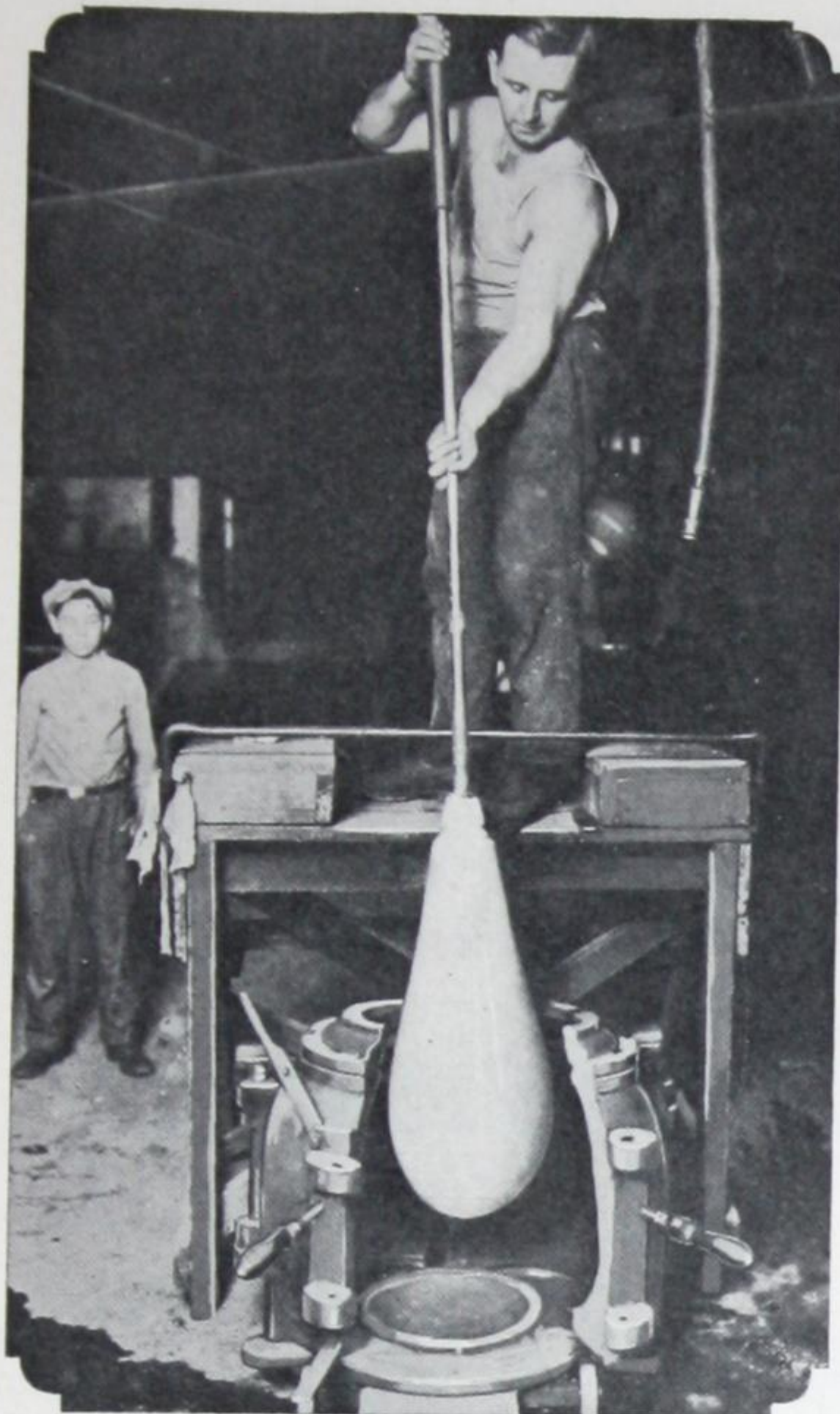


Fig. 3
Placing the globule in the mold

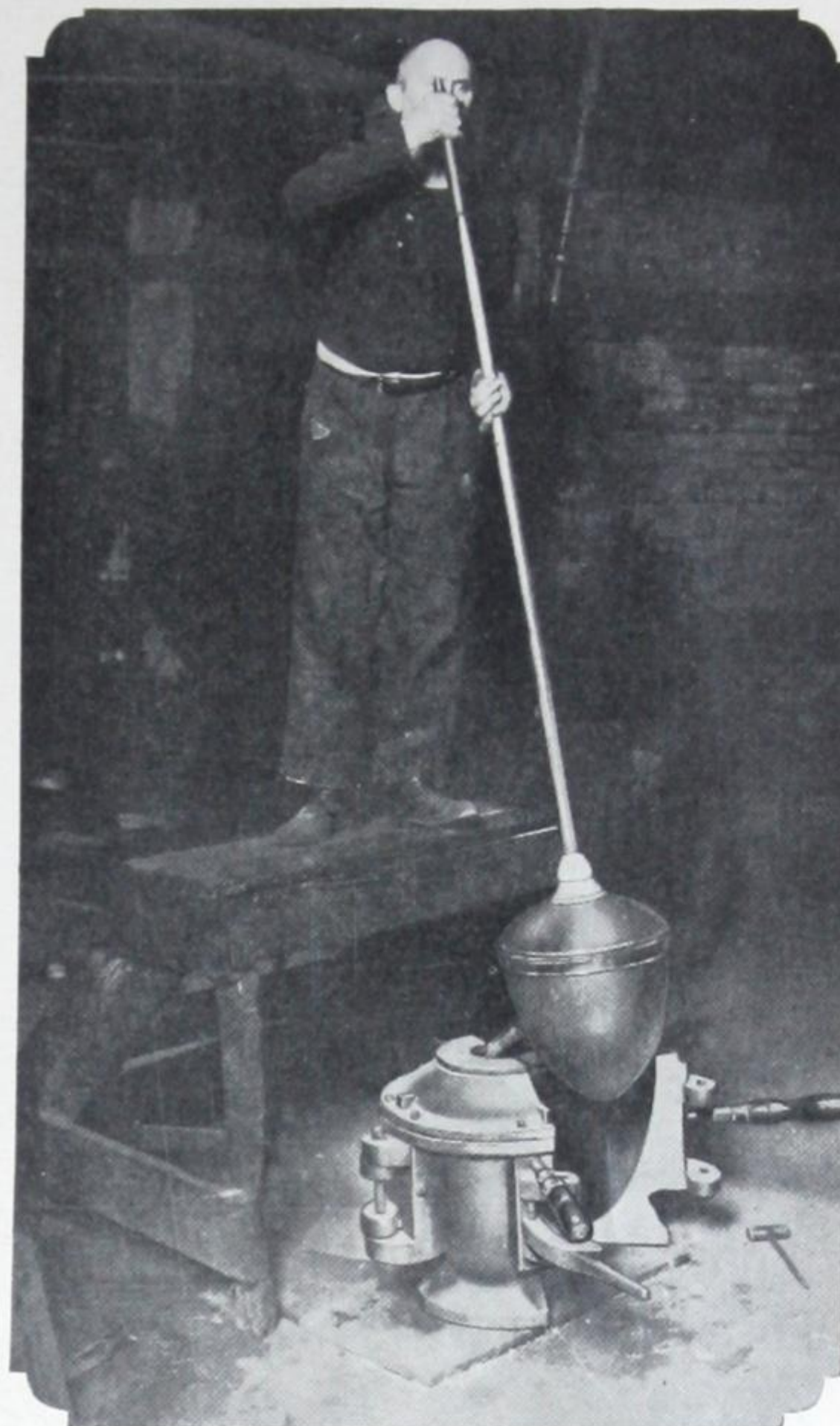


Fig. 4
Removing the No. 108 globe from its mold

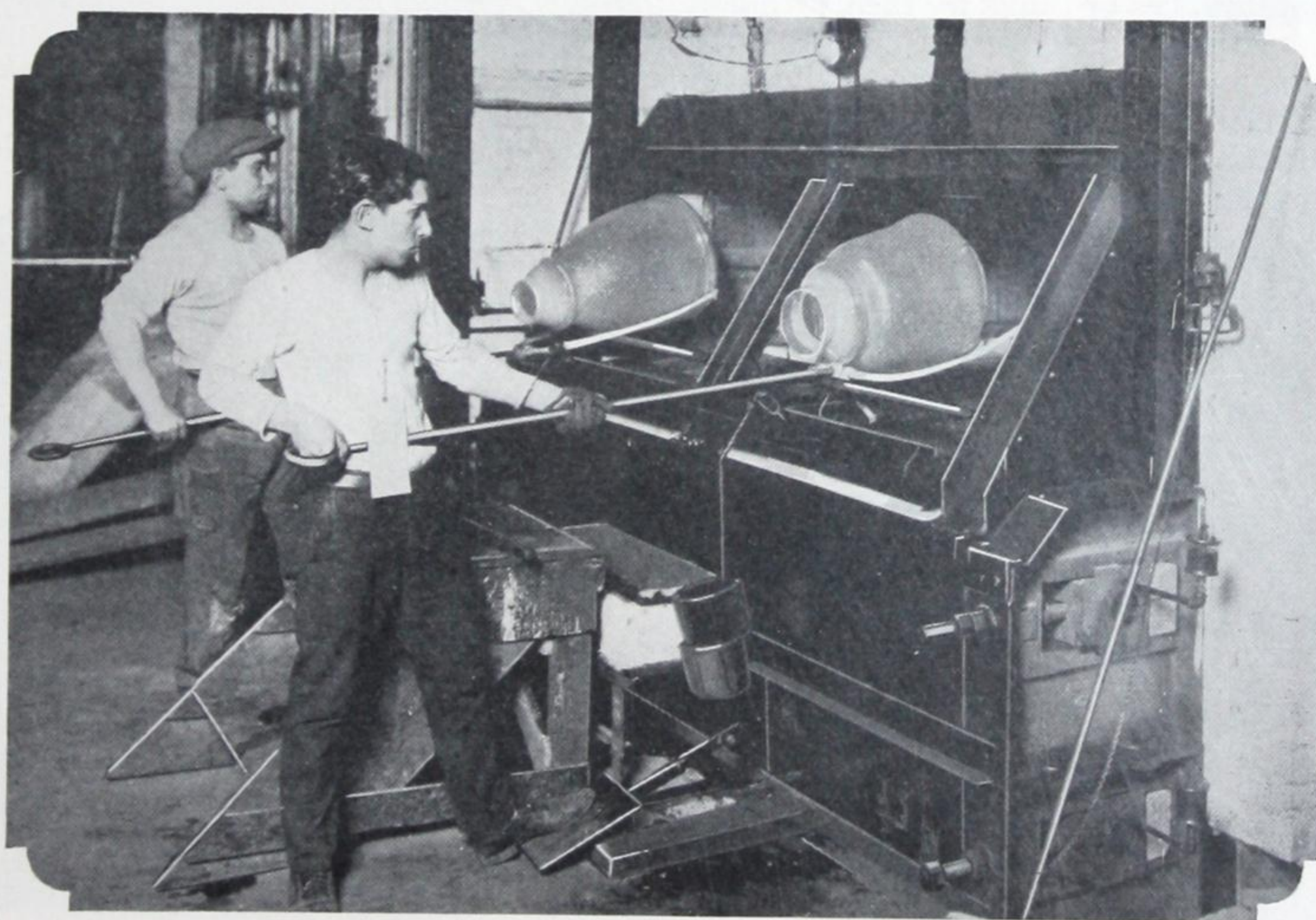


Fig. 5
Operators placing a No. 124 and a No. 107 globe in the leer or annealing oven.
The globes are drawn through the leer on an endless belt

G-E STREET-LIGHTING GLASSWARE



Fig. 6
Street-lighting globes at the cold end of the leer

MANUFACTURE

The constituents usually combined in manufacturing glass consist of some form of silica sand, an alkali flux such as potash or soda ash, and some form of lead, aluminum, or zinc. These materials are combined in furnaces or tanks by the continued application of heat at an intensity of 2600 to 3000 F, for periods varying, for different kinds of glass, from 12 to 36 hours. The molten glass is then formed into various shapes in molds.

The glass blower thrusts the end of a 6-ft steel blow pipe into the crucible containing molten glass, gathering as much material on it as is necessary. By blowing through the pipe, pressure is exerted upon the inside of this ball of glass, and a hollow globule is formed. This globule is slowly revolved until its walls are of about uniform thickness, while its outside surface is smoothed by use of wooden forms. This operation is illustrated in Fig. 1. The globule is built up to the desired size by



Fig. 7
Grinding the edges of a No. 104 globe, a No. 127 globe, and a No. 1124 canopy



Fig. 8
Workman cracking off the bottom overflow from the No. 118 globe

G-E STREET-LIGHTING GLASSWARE

repeated gatherings of the molten glass, expanding it by blowing, and smoothing it off. Fig. 1 shows the globule being removed from the furnace after about four gatherings. When the required size is reached, it is placed in the mold, as shown in Fig. 3, the mold is then clamped shut, and air is applied to the globule to force it into the shape of the mold. When the glass has solidified sufficiently to retain the globe shape, it is taken out of the mold. In Fig. 4 the No. 108 globe is being removed from its mold.

PACKING

One of the many reasons for the superior service of G-E glassware is the care with which it is packed. Many years of experience with the rough handling to which objects, similar in size and weight to those containing G-E glassware,

are subjected by indifferent or careless freight handlers, led to the testing, in all conceivable ways, of cartons of different design, construction, and material, packed with glassware, in order to ascertain which would best protect the contents from damage. The cartons now in use, which are constructed of double-face corrugated paperboard, are resilient as well as strong, and are of such a shape and size that they can be packed neatly and safely in large quantities for shipping.

Packing is done with the idea of protecting, to as great an extent as possible, all the pieces of glass contained in the carton. If one piece should be broken, the others are not in so much danger of also being broken as in other methods of packing. The cartons are made large enough to leave a space of one inch on each side between the globes and the walls of the cartons.



Fig. 9
Method of packing G-E street-lighting glassware

G-E STREET-LIGHTING GLASSWARE

OUTER GLOBES

PRICES INCLUDING PACKING CHARGES

GLOBE NO.	List Price Each, Class GO-51				CARTON SIZE OUTSIDE DIMENSIONS in in.	NO. IN STD PKG	APPROX SHIP. WT in Lb STD PKG
	Clear	Inlite, Snow White, Alba, Carrara, Marbo, Genco, Monax, Velva, Hyperion, Silva-glo	Alabaster or Polycase	* Colored Globes			
5	\$3.30	\$3.30	\$3.30	....	14 1/2 by 14 1/2 by 27 1/2	2	16
10	4.60	5.50	6.50	....	14 1/2 by 14 1/2 by 27 1/2	2	16
11	5.00	5.00	5.00	....	16 1/2 by 16 1/2 by 31 1/2	2	20
14	4.60	5.50	6.50	....	15 3/8 by 15 3/8 by 15 1/4	1	11
16	4.60	5.50	6.50	....	15 by 15 by 24 1/16	2	19
24	3.70	4.30	4.75	....	14 1/2 by 14 1/2 by 15	2	12
26	4.60	5.50	6.50	....	16 1/2 by 16 1/2 by 17	1	13
33	4.90	....	....	....	14 1/2 by 14 1/2 by 27 1/2	2	16
34	4.90	....	....	....	14 1/2 by 14 1/2 by 27 1/2	2	16
Δ†37	....	10.10	11.75	\$17.70	18 1/2 by 18 1/2 by 18	1	16
Δ†39	....	6.20	7.25	12.00	16 by 16 by 15	1	10
40	7.60	9.10	....	....	18 1/2 by 18 1/2 by 19 1/2	1	10
43	3.30	3.30	3.30	4.60	14 1/2 by 14 1/2 by 27 1/2	3	16
81	4.25	5.00	5.50	....	26 1/4 by 13 1/8 by 21 1/4	4	28
83	4.00	4.75	5.25	....	14 1/2 by 14 1/2 by 27 1/2	2	16
84	5.05	6.00	6.60	....	15 by 15 by 24 1/16	2	19
85	Silvered globe, order River Works, Lynn. Price on request to General Office				18 1/2 by 18 1/2 by 19 1/2	1	14
86	3.50	4.20	4.70	....	23 1/2 by 12 1/2 by 23	4	23
87	4.80	5.60	6.20	....	15 by 15 by 24 1/16	2	15
Δ†92	....	9.00	10.00	....	17 by 17 by 18 1/2	1	15
†93	....	9.00	10.00	....	17 by 17 by 18 1/2	1	15
Δ†97	....	15.70	17.30	....	19 1/2 by 19 1/2 by 21 1/2	1	22
98	3.50	4.20	4.70	....	23 1/2 by 12 1/2 by 23	4	23
Δ†103	....	9.85	10.85	....	16 1/2 by 16 1/2 by 19 3/8	1	15
†104	....	15.40	17.00	....	18 1/2 by 18 1/2 by 22	1	19
††105	4.45	....	5.30	....	15 1/2 by 15 1/2 by 26 1/2	3	26
Δ††107	....	....	10.10	15.25	18 1/2 by 18 1/2 by 18	1	17
††108	5.20	....	6.20	9.50	16 1/2 by 16 1/2 by 28	3	28
Δ††109	....	....	6.20	9.50	16 by 16 by 15	1	11
110	....	....	8.75	....	18 1/2 by 18 1/2 by 18	1	17
113	3.60	4.50	....	....	14 1/8 by 14 1/8 by 31 1/2	1	18
††116	4.45	....	5.30	7.00	15 1/2 by 15 1/2 by 26 1/2	3	26
117	....	....	14.00	....	19 1/2 by 19 1/2 by 21 1/2	1	23
Δ††118	....	....	15.70	25.00	19 1/2 by 19 1/2 by 21 1/2	1	23
Δ††123	....	....	9.85	....	16 1/2 by 16 1/2 by 19 3/8	1	16
Δ††124	....	....	15.40	....	18 1/2 by 18 1/2 by 22	1	22
†125	3.30	....	4.00	6.00	21 1/4 by 21 1/4 by 18	8	34
††126	....	....	32.00	....	22 3/4 by 22 3/4 by 25 1/8	1	38
°††126A	....	....	37.00	....	22 3/4 by 22 3/4 by 25 1/8	1	38
Δ††127	....	....	10.50	....	18 1/4 by 18 1/4 by 19 3/4	1	19
††128	....	....	9.00	....	17 by 17 by 18 1/2	1	15
Δ††134	....	....	15.70	....	19 1/2 by 19 1/2 by 21 1/2	1	23
††135	....	....	10.10	....	18 1/2 by 18 1/2 by 18	1	17
††137	....	....	10.10	....	18 1/2 by 18 1/2 by 18	1	18
††138	....	....	14.50	....	17 1/2 by 17 1/2 by 23	1	21
†141	3.50	....	4.20	....	12 1/2 by 12 1/2 by 13	1	6
††142	....	....	10.10	....	18 1/2 by 18 1/2 by 18	1	17
††143	3.80	....	4.50	....	12 by 12 by 15	1	7
144	....	....	17.75	....	14 1/2 by 14 1/2 by 21 1/2	1	14
†145	....	11.50	13.00	....	18 1/4 by 18 1/4 by 19 3/4	1	16
††146	....	....	11.50	....	18 1/4 by 18 1/4 by 19 3/4	1	19
††147	....	....	3.25	....	19 by 19 by 27 1/2	1	44
††148	....	....	6.20	....	16 by 16 by 15	1	11
††149	....	....	3.25	....	19 by 19 by 27 1/2	1	44
††150	....	....	10.50	....	18 1/4 by 18 1/4 by 19 3/4	1	19
††153	....	....	15.70	....	19 1/2 by 19 1/2 by 21 1/2	1	22
††154	....	....	14.00	....	16 by 16 by 20 1/2	1	14
††157	....	....	37.00	....	21 1/2 by 21 1/2 by 27 1/4	1	43
Δ††158	....	....	6.20	....	16 by 16 by 15	1	11

(Cont on next page)

Price References: { ° Includes globes equipped with upper and lower protecting rings.
† These globes should be sold for G-E luminaires only.
‡ Rippled glass only, other globes smooth.
Δ These globes can be furnished with spun aluminum ring. Add \$0.40 to list price.

* Order should specify color required.

Add \$0.50 each to list price for hole in bottom, not to exceed 3/4-in. diameter. This does not apply to No. 14, 108 or 113, as these globes have holes in bottom.

See "Loss and Breakage" on page 199.

NOTE—It is desirable to have all shipments uniform and, wherever possible, requisitions should specify the quantity or multiple thereof shown in packing schedule.

G-E STREET-LIGHTING GLASSWARE

OUTER GLOBES (Cont)

PRICES INCLUDING PACKING CHARGES

GLOBE NO.	List Price Each, Class GO-51				CARTON SIZE OUTSIDE DIMENSIONS in In.	NO. IN STD PKG	APPROX SHIP. WT in Lb. STD PKG
	Clear	Inlite, Snow White, Alba, Carrara, Marbo, Genco, Monax, Velva, Hyperion, Silva-glo	Alabaster or Polycase	* Colored Globes			
††161	....	....	\$15.70	....	19 1/2 by 19 1/2 by 21 1/2	1	24
††162	....	....	11.50	....	18 1/4 by 18 1/4 by 19 1/4	1	19
††166	\$4.80	....	5.60	\$8.50	15 by 15 by 24 1/16	2	17
††169	....	....	31.00	....	Barrel 26 by 30	1	85
△††170	3.50	....	4.20	....	12 1/2 by 12 1/2 by 13	1	6
††176	4.80	....	5.60	....	15 by 15 by 24 1/16	2	18
††179	....	....	9.90	....	13 1/2 by 13 1/2 by 20	1	12
††180	....	....	14.00	....	16 by 16 by 20 1/2	1	14
††192	....	....	9.00	....	17 by 17 by 18 1/2	1	15
††193	....	....	8.75	....	17 1/2 by 17 1/2 by 27 3/4	2	29
††199	....	....	15.50	....	18 1/2 by 18 1/2 by 27 9/16	1	25

See page 196 for footnotes and references.

CANOPIES

PRICES INCLUDING PACKING CHARGES

CANOPY NO.	List Price Each, Class GO-51				CARTON SIZE OUTSIDE DIMENSIONS in In.	NO. IN STD PKG	APPROX SHIP. WT in Lb. STD PKG
	Clear	Genco, Carrara, etc.	Alabaster, Polycase	* Colored Canopies			
1037		\$6.50	\$7.15	\$10.75	15 1/2 by 15 1/2 by 29	4	26
1039		6.00	6.60	9.90	15 1/2 by 15 1/2 by 29	6	26
1092		4.00	4.40	....	10 3/4 by 10 3/4 by 21	4	11
1097		7.10	7.80	....	15 1/2 by 15 1/2 by 29	4	26
1103		6.10	6.70	....	16 1/2 by 16 1/2 by 16 3/8	3	19
1104		8.70	9.60	....	18 1/2 by 18 1/2 by 19	3	26
†1107			4.50	6.75	14 1/2 by 14 1/2 by 24 1/4	6	28
†1109			4.00	6.00	13 by 13 by 23 3/4	6	21
†1118			5.10	7.65	27 by 14 1/2 by 21 9/16	4	26
†1123			6.10	9.15	16 1/2 by 16 1/2 by 16 3/8	3	19
†1124			8.70	13.10	18 1/2 by 18 1/2 by 19	3	26
†1126			6.10	....	15 by 15 by 26	2	16
†1127			4.50	....	25 by 13 1/4 by 20 1/4	4	20
†1128			3.75	....	21 1/4 by 11 3/4 by 18 3/8	4	15
†1138			3.75	....	13 1/2 by 13 1/2 by 20 3/4	6	19
†1147			1.90	....	16 1/2 by 16 1/2 by 17	12	22
†1149			2.30	....	16 1/2 by 16 1/2 by 17	12	25
†1169			62.00	....	30 by 30 by 26 1/2	2	145

† Rippled glass only, other glassware smooth. Should be sold for G-E luminaires only.

* Order should specify color required.

See "Loss and Breakage" on page 199.

NOTE— It is desirable to have all shipments uniform and, wherever possible, requisitions should specify the quantity or multiples thereof shown in packing schedule.

G-E STREET-LIGHTING GLASSWARE

GLASS PANELS

FOR ORNAMENTAL STREET-LIGHTING FIXTURES

FORM NO. OF FIXTURE	PANEL NO.	NO. USED IN UNIT	DRAWING NUMBER	List Price Each Class GO-51		NO. IN STD PKG	APPROX SHIP. WT in Lb. STD PKG
				Rippled (Light or Medium Alabaster)	Granite Δ Opalescent		
4, 9, 12, and 16 Novalux and Luminous Arc	90	8	393814	\$6.00 *	....	32	100
	136	8	2322695	6.00	....	32	115
18A and 33A Novalux	114-S	8	1392617	2.50	\$0.70	64	83
	114-C	8	1392618	1.10	.40	128	104
18B and 33B Novalux	115-S	8	1392559	2.50	.90	64	99
	115-C	8	1392557	1.10	.50	128	104
19A Novalux	114-S	8	1392617	2.50	.70	64	83
	114-CS	8	2378511	1.10	.40	128	104
	* 114-L	1	1392615	....	.40	...	...
19B Novalux	115-S	8	1392559	2.50	.90	64	99
	115-CS	8	4893675	1.10	.50	128	104
	* 115-L	1	1392558	....	.60	...	...
23A Novalux	121-S	8	2303561	....	.90	64	55
23B Novalux	122-S	7	2303849	....	1.10	64	90
	122-D	1	2303848	....	1.10	†	..
	122-C	8	2303850	....	.60	128	32
24B Novalux	122-S	7	2303849	....	1.10	64	90
	122-D	1	2303848	....	1.10	†	..
	122-C	8	2303850	....	.60	128	32
	122-L	8	2300815	....	.30	...	...
33 Novalux	177	4	2393047	4.10 ‡	....	15	...
38 Novalux	122-S	8	2303849	....	1.10	64	90
	122-C	8	2303850	....	.60	128	32
56 Novalux	198-S	8	4888985	....	.70	64	83
	198-C	8	4888986	....	.40	128	104

* Furnished in white carrara or polycase only.

† Door panels included in box with side panels.

‡ Price in clear rippled.

 Δ No. 1 GGL is the glass company's trade name for granite opalescent glass.

° Furnished in granite opalescent and not in rippled glass.

See "Loss or Breakage" page 199.

S = Side. C = Canopy. L = Lower or Bottom. D = Door.

NOTE—It is desirable to have all shipments uniform and, wherever possible, requisitions should specify the quantity or multiple thereof shown in packing schedule.

G-E STREET-LIGHTING GLASSWARE

BALL GLOBES

PRICES INCLUDING PACKING CHARGES

DIAMETER in In.	FITTER SIZES in In.	△Net Price Each F.O.B. Nearest Point of Manufacture*					ADD PER HOLE FOR DRILLING 1/2 IN. DIA. HOLE†	NO. IN STD PKG	APPROX SHIP. WT in Lb STD PKG
		△ Clear	△ C.R.I.	△ Monax, Inlite, Snow White, Alba, Carrara, Marbo, Genco, Velva, Hyperion, Silva-glo, Opal, Nova	△ Alabaster or Polycase	△† Transparent Colored			
6	3 1/4 or 4	\$0.23	\$0.21	\$0.20	\$0.27	\$0.60	\$0.04	12	15
7	3 1/4 or 4	.30	.26	.23	.35	.79	.07	12	21
8	3 1/4 or 4	.36	.33	.35	.44	.97	.07	8	20
10	4, 5, or 6	.85	.85	.55	1.01	1.69	.09	4	15
12	4, 5, 6, or 8	1.28	1.28	.88	1.53	2.54	.14	2	13
14	6, 7, or 8	1.94	1.94	1.29	2.32	3.87	.14	1	11
16	6 or 8	2.73	2.73	1.65	3.27	5.55	.19	1	15
18	8 or 10	4.84	4.84	4.84	5.81	9.68	.27	1	18
20	8 1/4 or 10	8.48	8.48	8.48	10.16	16.94	.55	1	27

* Globes manufactured in { Philadelphia
Brooklyn, N. Y.
Charleroi, Pa.

Monaca, Pa.
Chicago, Ill.

Meriden, Conn.
Elwood, Ind.

† Other sizes available on request.

† For hole other than 1/2 in. diameter, add 50 per cent to listed drilling charge.

† Order should specify color required.

△ Prices apply on ground fitter globes. Add to above prices \$0.05 for chip-proof fitter; \$0.17 each for span or split aluminum ring; \$0.22 each for spun or split copper ring. Unless otherwise specified, either chip-proof or ground fitters will be furnished at the discretion of the G. E. Co. depending on existing stocks. Colored and polycase globes are supplied only with ground fitters. For colored globes roughed inside, add 10 per cent.

Whenever possible, order standard package quantities or multiples thereof.

NOMENCLATURE

	GLEASON- TIEBOUT GLASS CO.	PHOENIX GLASS CO.	MACBETH- EVANS GLASS CO.	INLAND GLASS CO.	GILL-VIRDEN GLASS CO.	DESCRIPTIVE
Trade Names Used by M'f'r's for Different Kinds of Glass	Clear C.R.I. C.R.O.	Clear C.R.I. C.R.O.	Clear C.R.I. C.R.O.	Clear C.R.I. C.R.O.	.....	Sometimes called crystal Clear glass sandblasted inside Clear glass sandblasted outside
	Opal Carrara	Opal Marbo	Opal Alba	Opal Snow White	Nova Velva	Dense-homogeneous glass—with very low transmission Light density—homogeneous glass—fairly high trans- mission—good diffusion—shows light source
	Silva-glo	† Genco	Monax	Inlite	Hyperion	Very light density—homogeneous glass—high transmission— excellent diffusion—light weight—conceals light source
	Alabaster	Alabaster	Alabaster	.....	.....	Cased or plated glass—fairly good diffusion—consists of one casing of clear and one of opal glass
	Polycase	.....	.....	.....	.....	Three-cased glass—opal plated on inside and outside with clear glass. Particularly adapted for use with 6.6-amp ornamental luminous lamps. Strong and does not show pitting.
	Rippled	.....	Rippled	Rippled	.....	Clear or alabaster glass—better diffusion—less glare

† Sold by Phoenix Glass Company under trade name "Radiant."

LOSS OR BREAKAGE

All glassware is packed securely by experienced packers, who use the very best packing material. Glassware is shipped at the risk of consignee.

Visible Loss or Damage. For protection against damage in transit, if shipment shows evidence of rough handling, insist that the Agent of the Carrier note on the Paid Expense bill the condition of the packages. See that all packages receipted for are actually received.

Concealed Damage. When breakage is excessive, stop unpacking and call Agent of the Carrier immediately so that he can inspect the condition

of the shipment. Have agent sign statement of the condition of the shipment on the Paid Expense bill.

Notice. Written claims for loss or damage must be filed immediately with the Agent of the Carrier, showing date and place of shipment, name of shipper, consignee, and destination, with amount of loss or damage. If the exact amount of loss or damage cannot be determined when notice of claim is filed, the amount stated in the notice can be corrected later. Failure promptly to file notice of claim for loss or damage may result in your being unable to collect the claim.

G-E STREET-LIGHTING GLASSWARE

OUTER GLOBES

DATA

GLOBE NO.	OUTLINE DRAWING NO.	FITTER DIMENSIONS IN IN.		GLASS THICKNESS TOLERANCES IN IN.		NET WEIGHT TOLERANCES IN LB		LARGEST LAMP SIZE PERMITTED *	GLASS CANOPY USED	UNIT ON WHICH GLOBE IS USED
		Top	Bottom	Max	Min	Max	Min			
5	MP- 10024	6 5/8	....	5/32	3/32	....	....	....	....	Form 3, 110-volt, D-c, Multiple Arc Forms 3 and 4, Power Circuit Arcs Form 5, A-c Series Arc Form 3, A-c Multiple Arc Form 6, D-c Series Arc
10	MP- 10045	6	....	5/32	3/32	....	....	....	....	Form 7, A-c Series Arc Form 10, D-c Series Arc Form 7, A-c Multiple Arc
11	MP- 10023	8 3/8	....	5/32	3/32	....	....	....	....	Form 11, D-c Series Arc
14	325993	13 3/8	....	3/16	1/8	....	....	500	....	Special Form 1 Nov. D-c Lum. Pendent —Except Form 17
16	325590	10 15/16	....	5/32	3/32	....	....	....	....	Form 1 Nov. Type W Flame 12-in. Trim
24	342031	12 1/16	....	1/8	1/16	....	....	....	....	A-c and D-c Intensified Arc
26	P- 285760	8 15/16	....	5/32	3/32	....	....	....	....	Series Lum. Arc—Boston Edison Globe
33	325352	9	5	5/32	3/32	....	....	....	....	M Type Open Arc and Improved M Type Open Arc
34	325354	8 1/4	4	5/32	3/32	....	....	....	....	Old Style K Arc
37	361431	11	9 7/16	3/16	1/8	12	10	....	{ 1037 1037A 1097 }	Form 10, Series Lum. Arc Forms 4, 9, 12, 16, 22, and 33 Novalux
39	361438	9 7/16	8 3/16	3/16	1/8	7	5	500	1039	Form 12 Orn. Lum. Residential Type Forms 8, 12, 13, 22, and 33 Novalux
40	388525	13 1/4	9 7/16	3/16	1/8	....	....	....	....	Form 14 Orn. Lum. Parkway Lamp
43	013089	6	....	5/32	3/32	....	....	....	....	G.I. Arc Lamp
45	025279	6 1/8	....	....	....	....	....	....	....	Arc Lamp
81	1312057	7 3/4	....	5/32	1/8	....	....	500	....	Form 2 Novalux
83	1312064	7 3/4	....	5/32	1/8	....	....	500	....	Form 2 Novalux (same as 80 except has hole in bottom)
84	1312146	10 15/16	....	5/32	3/32	....	....	500	....	Form 1 Novalux
85	1312173	13 5/16	....	3/16	1/8	....	....	1000	....	Form 17 Pendent Lum. Arc
86	1301731	8 1/8	....	5/32	1/8	....	....	....	....	Special Form 1 for New York City
87	393718	9 1/4	....	3/32	1/8	5	4	500	....	Form 6 Novalux
92	1340156	7 1/16	6 1/16	....	....	9 1/2	7 1/2	500	1092	Form 13 Novalux
93	1340213	7 1/16	8 3/16	3/16	1/8	9 1/2	7 1/2	500	1092	Forms 8, 10, 12, 13, and 22 Novalux
97	1340026	10 5/8	9 1/4	3/16	1/8	15 1/2	12 1/2	1000	1097	Forms 4, 9, 12, 16, and 22 Nov.—Lum. Arc
98	393892	8 1/2	....	5/32	1/8	....	....	300	....	Forms 11, 17, 46, and 47 Novalux
103	1373717	14	7 1/8	3/16	1/8	10	8	750	1103	Forms 8, 12, 22, and 33 Novalux
104	1373716	16	8	3/16	1/8	12 1/4	9 1/4	1000	1104	Forms 12, 22, and 33 Novalux
105	1340398	12 1/4	....	....	....	6 1/2	5	500	....	Form 6 Novalux
107	1340456	11	9 7/16	....	....	12	10	1000	{ 1107 1118 }	Forms 4, 9, 12, 16, 22, and 33 Novalux
108	1373803	13 3/8	....	....	....	6 1/2	5 1/2	750	....	D-c Pendent Lum.—Except Form 17 Form 25B Novalux
109	1340457	9 5/8	8 3/16	3/16	1/8	8	6	500	1109	Forms 8, 10, 12, 13, 22, and 33 Novalux
110	1392009	8	....	5/32	3/32	....	....	....	....	Form 1 Novalux
113	1392036	11 7/8	....	5/32	3/32	....	....	500	....	Special for Buffalo—Form 6 Novalux
116	1392102	12 1/4	....	....	....	6 1/2	5	500	....	Form 6, 25A, and 32 Novalux
117	1392198	10 1/2	9 1/16	3/16	1/8	15 1/2	12 1/2	....	....	Form 15 Orn. Arc—Goes inside 8 Panel Globe Frame (1 Piece)
118	2322524	11	9 7/16	3/16	1/8	16	13	1000	1118	Forms 4, 9, 12, 16, 22, 27, and 33 Novalux
123	2322503	14	7 1/8	....	....	11 1/2	9	750	1123	Forms 8, 12, 22, and 33 Novalux
124	2322504	16	8 1/8	....	....	15 1/2	12 1/2	1000	1124	Forms 12, 22, and 33 Novalux
125	2322581	8 1/2	....	....	....	3	2	300	....	Forms 6, 11, 17, 46, and 47 Novalux
126	2322601	11	10 7/16	....	....	25	20	2000	1126	Form 21 Lum. Arc
126A	2346162	11	10 7/16	....	....	25	20	2000	1126	Equipped with Protecting Rings— Forms 9, 12, 16, and 22 Novalux
127	2322614	9 3/4	8 3/16	3/16	1/8	13	10	750	1127	Forms 8, 10, 12, 13, 22, and 33 Novalux
128	2322617	7 15/16	8 3/16	3/16	1/8	10	8	500	1128	Forms 8, 10, 12, 13, 22, and 33 Novalux
134	2322690	11	9 7/16	3/16	1/8	16	13	1000	....	Arc Lamps—Similar to No. 118
135	2322697	11	7	....	....	12	10	1000	{ 1107 1118 }	Form 30 Novalux—Similar to No. 107— Except has 7-in. Lower Fitter
137	2322691	11	9 7/16	3/16	1/8	13	11	....	....	Form 10 Lum. Arc—Similar to No. 107— Except for Arc Lamps
138	2346026	9 3/4	7	3/16	1/8	12 1/2	10	750	1138	St. Louis Special—Rippled
141	2346048	6	....	3/16	1/8	4	3	100	....	Gas Filling Stations
142	2346049	11	8	....	....	12	10	1000	{ 1107 1118 }	Same as No. 107, except 8-in. Bottom Fitter

(Cont on next page)

* With refractor in globes refer to pages 189 and 190, for largest lamp size.
Lamp wattage indicated is maximum for heating and does not consider brightness of globe.

G-E STREET-LIGHTING GLASSWARE

OUTER GLOBES

DATA (Cont'd)

GLOBE NO.	OUTLINE DRAWING NO.	FITTER DIMENSIONS IN IN.		GLASS THICKNESS TOLERANCES IN IN.		NET WEIGHT TOLERANCES IN LB.		LARGEST LAMP SIZE PERMITTED *	GLASS CANOPY USED	UNIT ON WHICH GLOBE IS USED
		Top	Bottom	Max	Min	Max	Min			
143	2346058	8 1/2	....	3/16	1/8	4 1/2	3 1/2	300	....	Forms 6, 11, 17, 46, and 47 Novalux—Replaces No. 125
144	2346062	....	6	....	....	9	7	200	....	Flame Torch Globe
145	2346064	10	....	....	....	10	8	750	....	Polycase Globe
146	2346065	10	....	....	....	13	10	750	....	Form 32 Novalux
147	2346071	4 9/16	4 1/8	3/32	1/16	2 3/4	1 3/4	100	1147	Miniature No. 118
148	2346063	9 5/8	8	3/16	1/8	....	....	500	1109	Same as No. 109—Except with 8-in. Bottom Fitter
149	2346092	7	3 1/2	3/32	1/16	2 3/4	1 3/4	200	1149	Miniature No. 124
150	2346093	9 3/4	8	....	....	13	10	750	1127	Same as No. 127—Except with 8-in. Bottom Fitter
153	2346130	10 1/2	9 1/16	3/16	1/8	15 1/2	12 1/2	1000	1118	Form 9 Novalux—For Use in Eight-panel Globe Frame
154	2346135	....	8 3/16	3/16	1/8	10	7 1/2	300	....	Similar to No. 109—Except with Canopy Molded as Part of Globe
157	2346144	12 3/8	....	....	....	25	22 1/2	1500	....	Form 32B Novalux
158	2346145	9 3/4	7	3/16	1/8	8	6	500	1109	Same as No. 109—Except with 7-in. Bottom Fitter
161	2346168	11	9 7/16	3/16	1/8	17	14	1000	1118	Same as No. 118—Except Rectangular
162	2346199	10	....	....	....	13	10	750	....	Same as No. 146—Except Rectangular
166	2346165	9 7/16	....	3/16	1/8	6	5	500	....	Supersedes No. 120
169	2346170	21 7/16	10 7/16	....	....	25	22	2000	1169	Form 12 Novalux—Washington Blvd.
170	2346177	8 1/2	....	3/16	1/8	4	3	100	....	Same as No. 141—Except 8 1/2-in. Fitter
176	2393023	9 7/16	....	3/16	1/8	6 1/2	5 1/2	500	....	Same as No. 166—Except Rectangular
179	2393129	9 3/4	....	....	....	8	6 1/2	300	....	Form 43 Marine Lantern
180	2393167	....	8	3/16	1/8	10	7 1/2	300	....	Similar to No. 154—Except 8-in. Fitter
192	3775527	7 15/16	8	3/16	1/8	10	8	300	1128	Similar to No. 128—Except 8-in. Bottom Fitter
193	3775690	14 13/16	....	3/16	1/8	12	10	1000	....	Form 25C Novalux
199	3775986	....	8	3/16	1/8	17	15	750	....	Forms 12, 22, and 33 Novalux

* With refractors in globes, refer to pages 189 and 190, for largest lamp size.

Lamp wattage indicated is maximum for heating and does not consider brightness of globe.

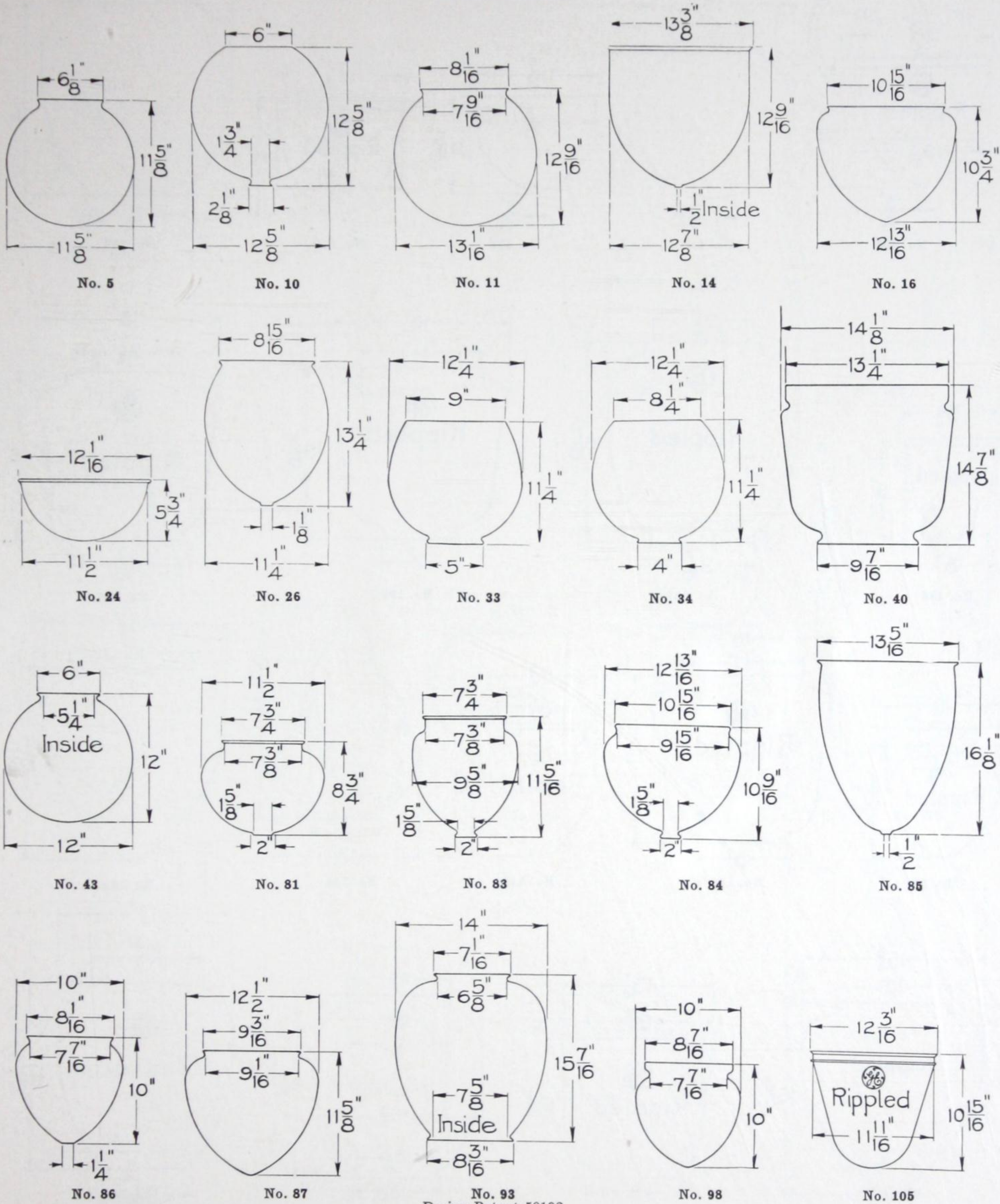
CANOPIES
DATA

CANOPY NO.	OUTLINE DRAWING NO.	GLASS THICKNESS TOLERANCES IN IN.		FITTER DIMENSIONS IN IN.		NET WEIGHT TOLERANCES IN LB.		GLOBE USED WITH	UNITS ON WHICH CANOPY IS USED
		Max	Min	Top	Bottom	Max	Min		
1037	P-1222950	....	....	....	11 1/2	5	3 1/2	37	Form 10 Series Lum. Arc—Forms 4, 9, 12, 15, 16, 22, and 33 Novalux
1037A	1373721	....	....	....	11 3/8	5	3 1/2	37	Form 10 Series Lum. Arc—Forms 4, 9, 12, 15, 16, 22, and 33 Novalux
1039	P-1222949	....	....	....	10 3/8	3	2	39	Form 12 Lum. Arc—Residential Type—Forms 8, 12, 13, 22, and 33 Novalux
1092	1373720	....	....	....	8	2 1/2	1 1/2	92 and 93	Form 13 Novalux
1097	1372761	....	....	....	11 9/16	5	3 1/2	37 and 97	Form 10 Series Lum. Arc—Forms 4, 9, 12, 16, and 22 Novalux
1103	1373715	....	....	....	14	4 3/4	3 3/4	103	Forms 8, 12, 22, and 33 Novalux
1104	1373714	....	....	....	16	6 1/2	5 1/2	104	Forms 12, 22, and 33 Novalux
1107	1392066	5/32	1/8	....	11 7/8	4	3	107, 135, 142	Forms 4, 9, 12, 16, 22, and 30 Novalux
1109	1392067	5/32	1/8	....	10 1/2	3	2	109	Forms 8, 10, 12, 13, 22, and 33 Novalux
1118	2322525	3/16	1/8	....	11 7/8	5	4	107 118 135 142 153 161	Forms 4, 9, 12, 16, 22, 27, 30, and 33 Novalux
1123	2322501	5/32	1/8	....	14	4 3/4	3 3/4	123, 177	Forms 8, 12, 22, and 33 Novalux
1124	2322502	5/32	1/8	....	16	6 1/2	5 1/2	124	Forms 12, 22, and 33 Novalux
1126	2322613	5/32	1/8	....	12	5 3/4	4 3/4	126, 126A	Form 21 Lum. Arc—Forms 9, 11, 12, 16, and 22 Novalux
1127	2322615	5/32	1/8	....	10 11/16	3 1/2	2 1/2	127	Forms 8, 10, 12, 13, 22, and 33 Novalux
1128	2322616	5/32	1/8	....	8 7/8	3 1/2	2 1/2	128	Forms 8, 10, 12, 13, 22, and 33 Novalux
1138	2346025	5/32	1/8	....	10 9/16	3	2	138	St. Louis Special—Rippled
1147	2346072	3/32	1/16	....	5 1/8	1 1/4	3/4	147	Miniature No. 1118
1149	2346091	3/32	1/16	....	7	1 1/2	1	149	Miniature No. 1124
1169	2346171	5/32	1/8	....	22 7/8	18	16	169	Form 12 Novalux

G-E STREET-LIGHTING GLASSWARE

OUTER GLOBES

DIMENSIONS

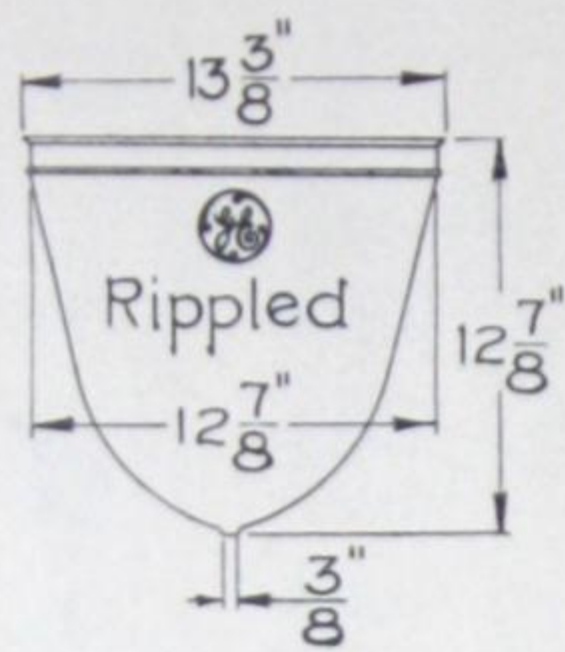


For dimensions of globes No. 37, 39, 92, 97, 103, and 104, see page 206.
For prices refer to page 196.

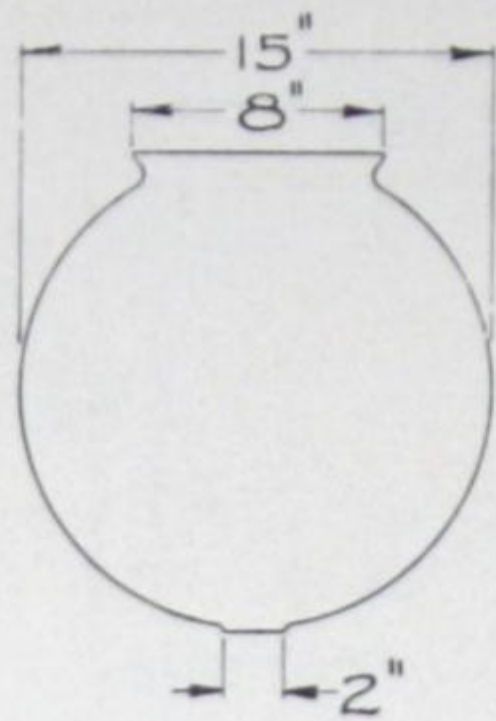
G-E STREET-LIGHTING GLASSWARE

OUTER GLOBES

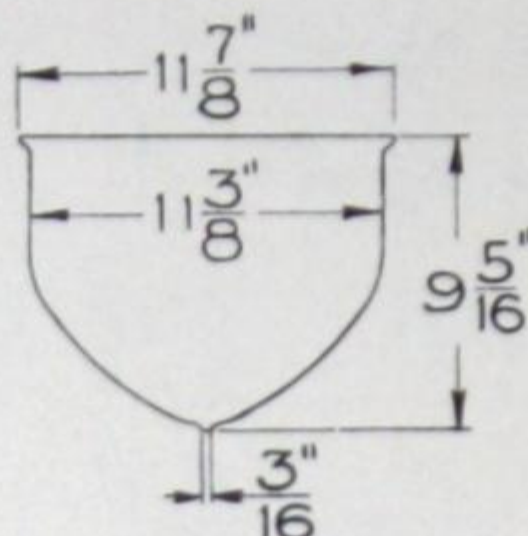
DIMENSIONS



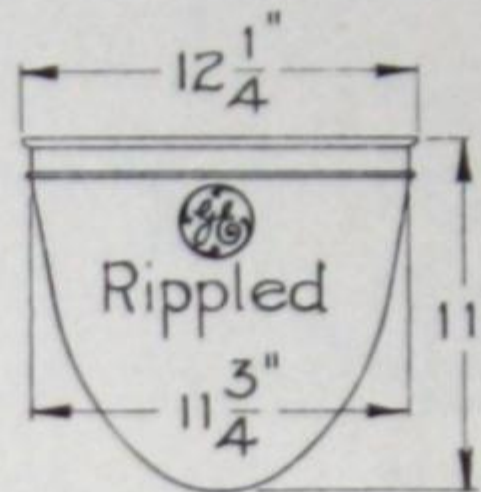
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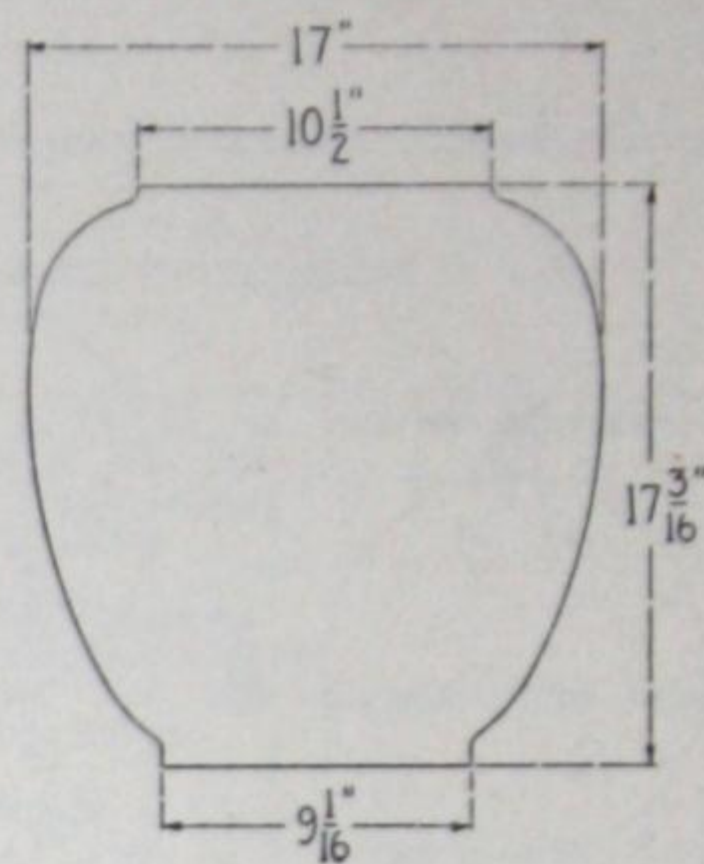
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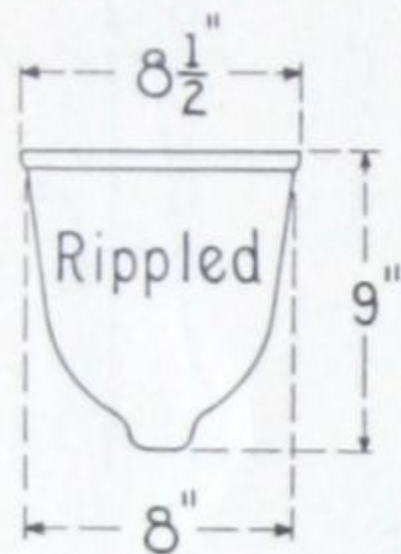
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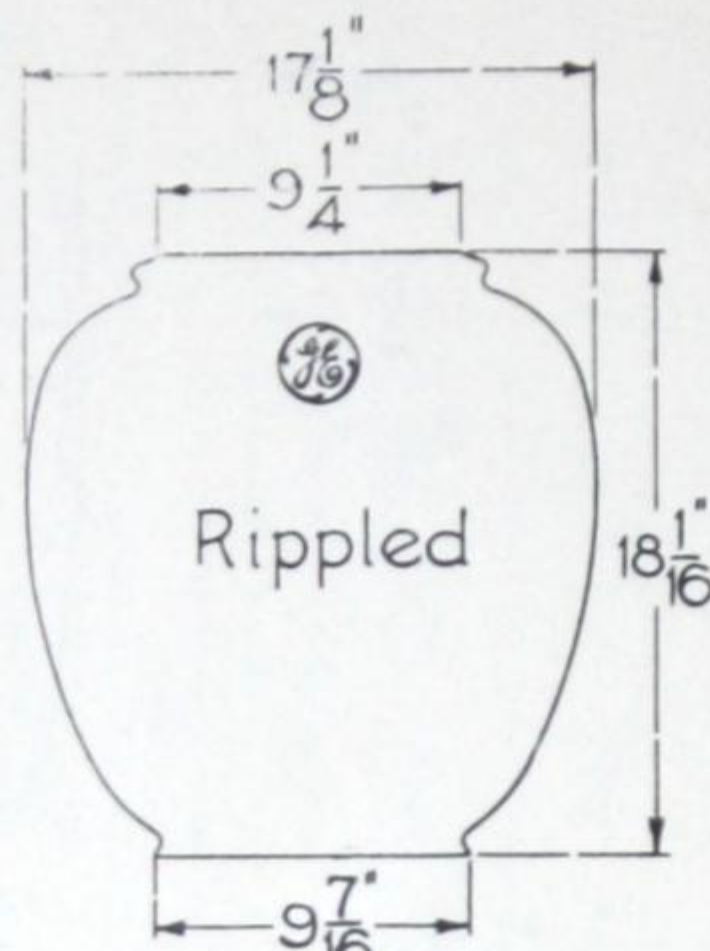
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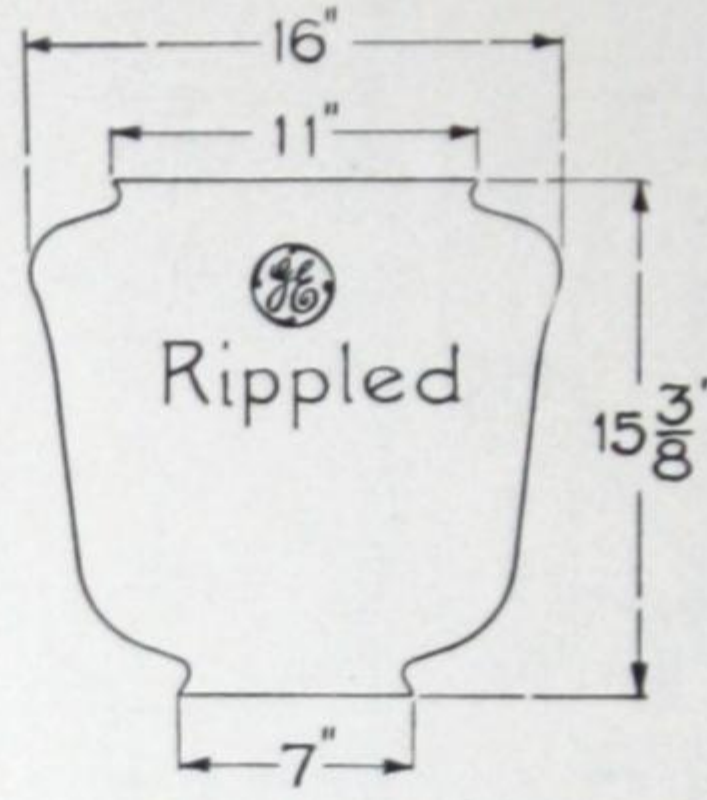
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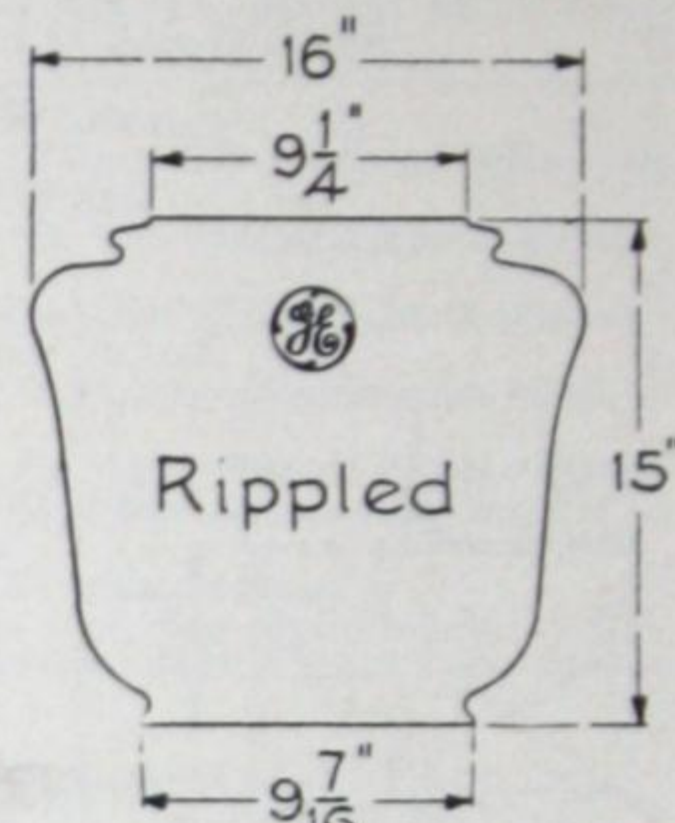
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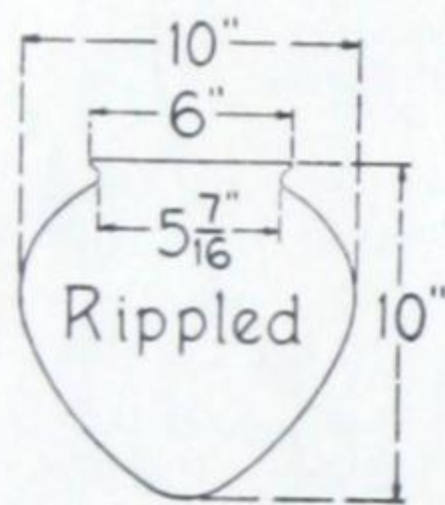
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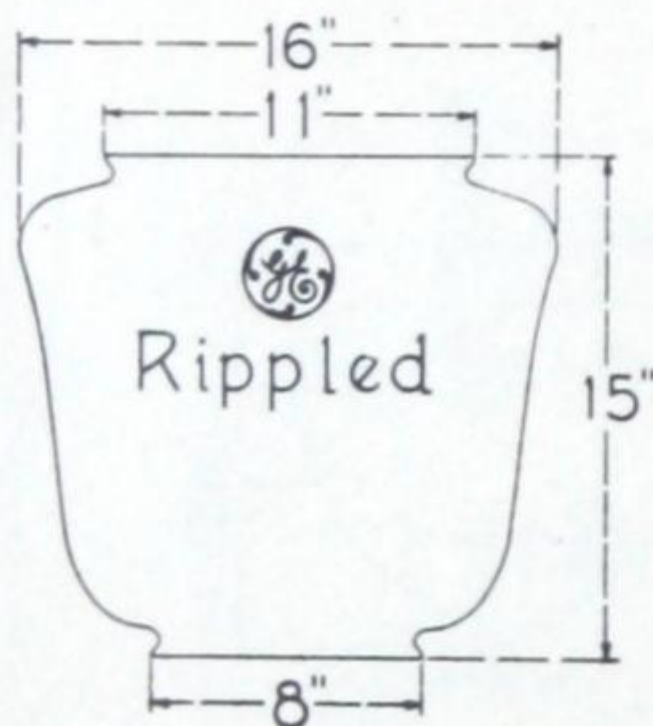
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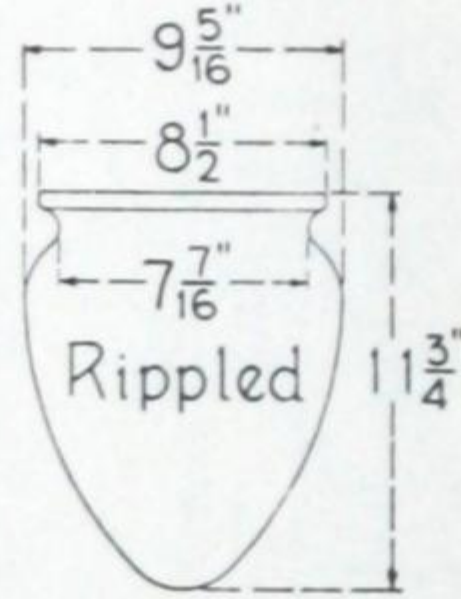
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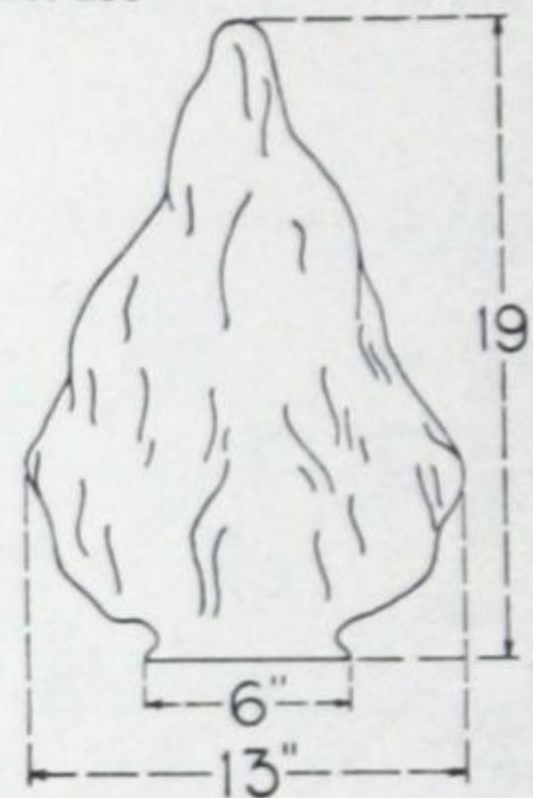
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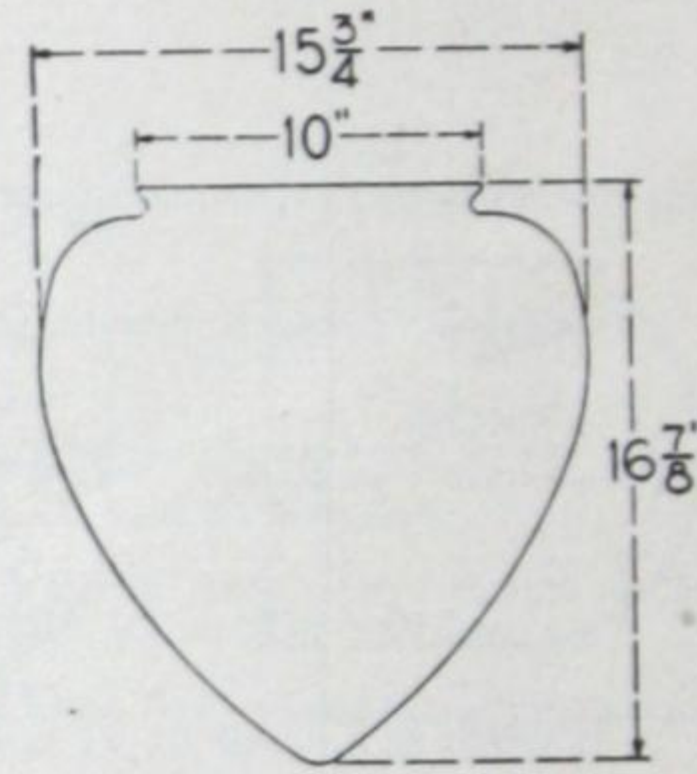
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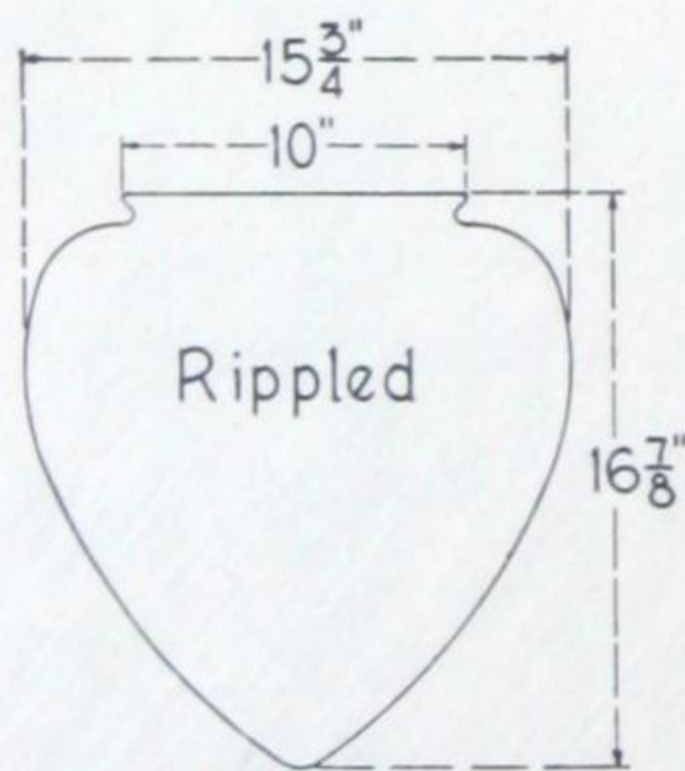
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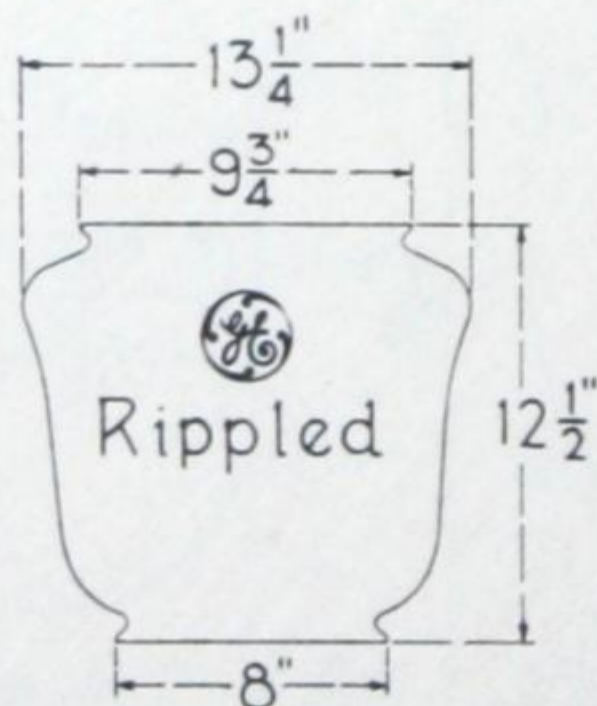
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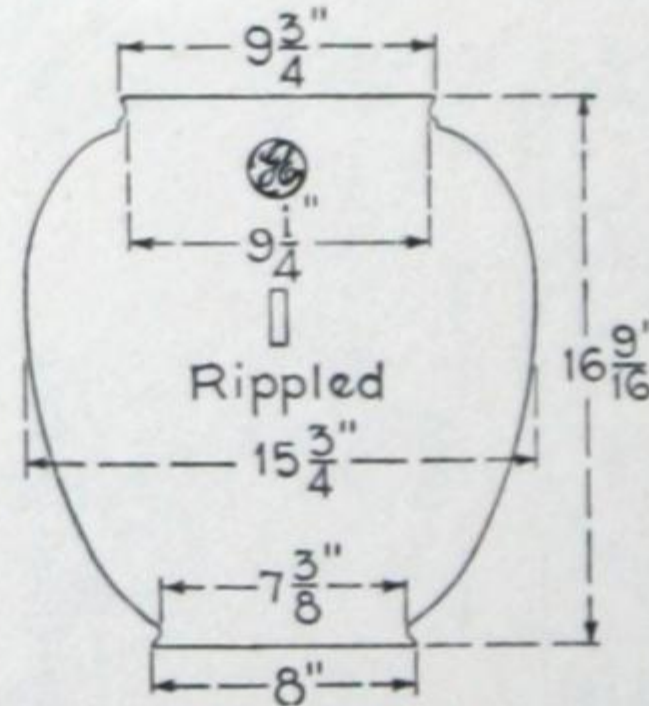
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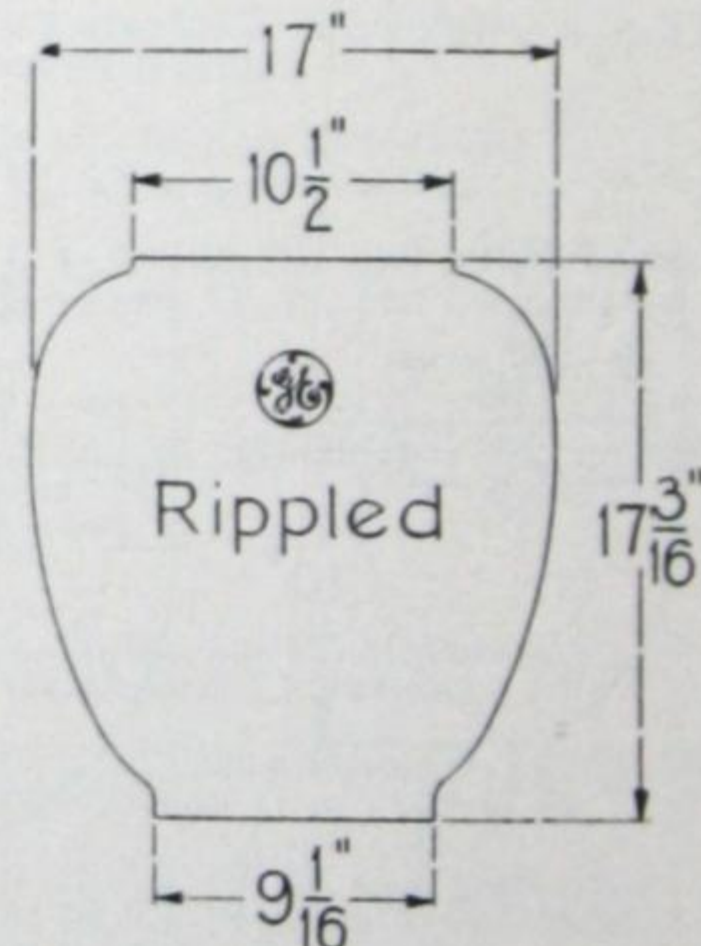
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No. 148



No. 150



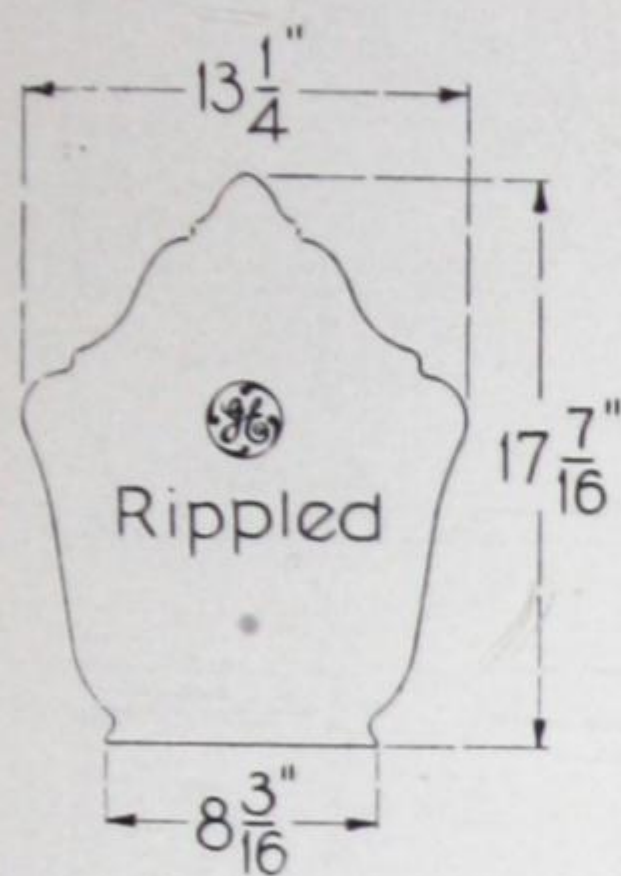
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For dimensions of globes No. 107, 109, 118, 123, 124, 126, 126A, 127, 128, 138, 147, and 149, see pages 206 to 208 incl.
For prices refer to page 196.

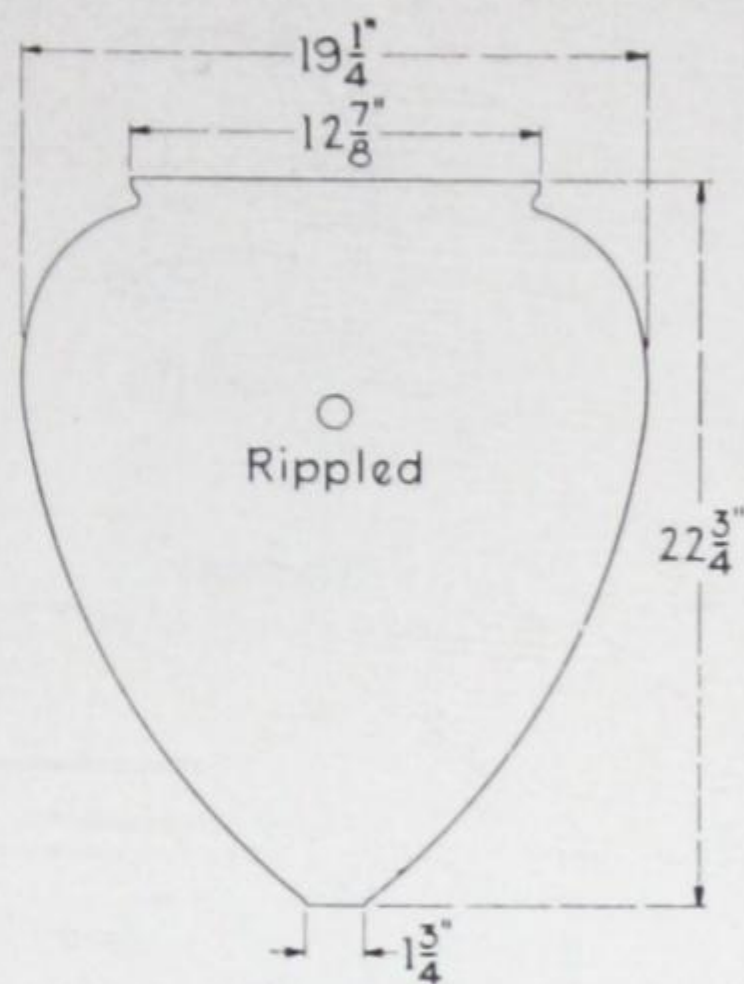
G-E STREET-LIGHTING GLASSWARE

OUTER GLOBES

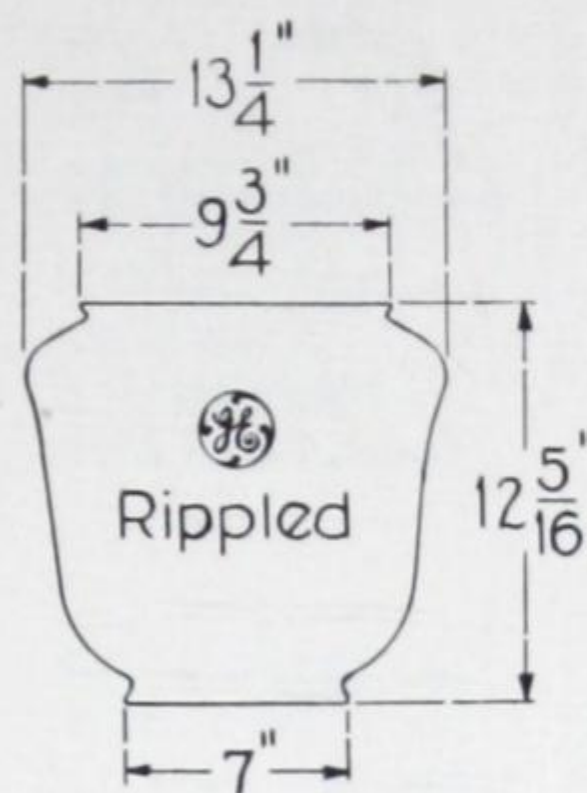
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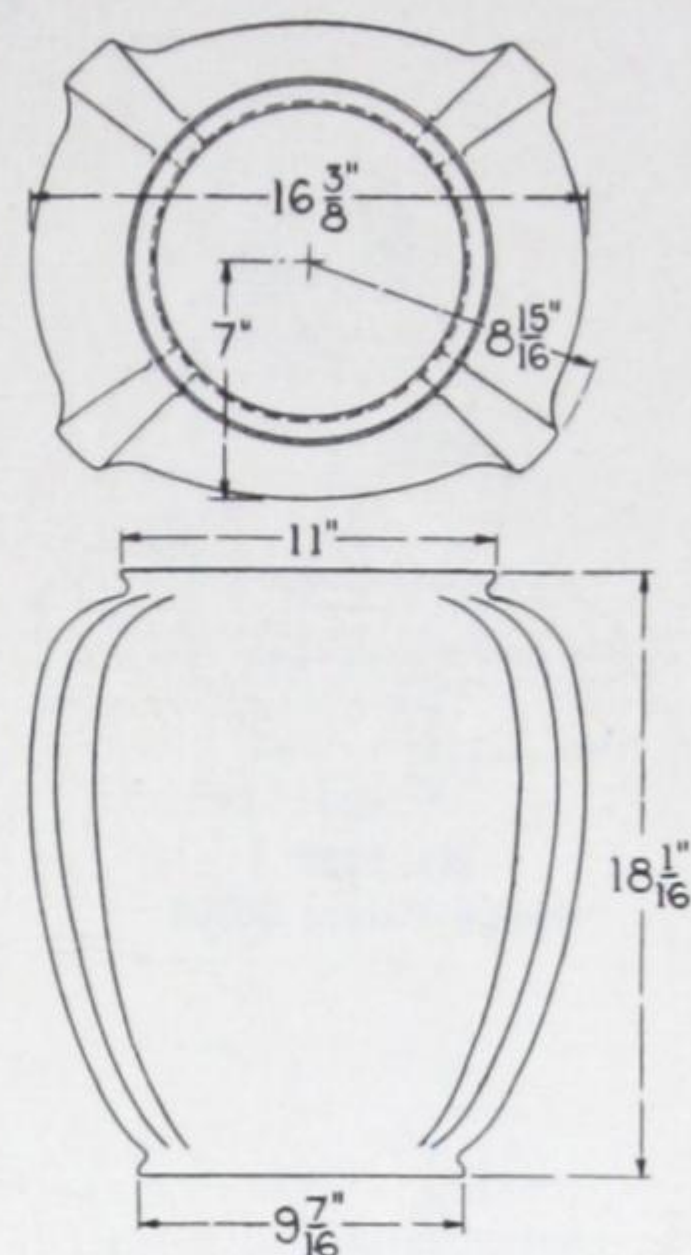
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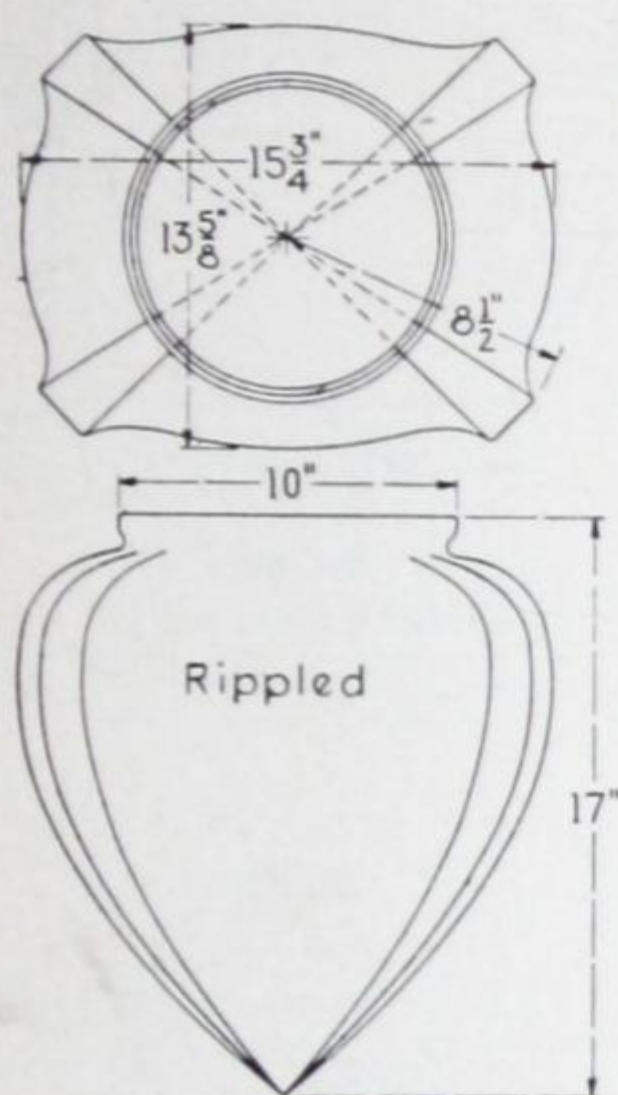
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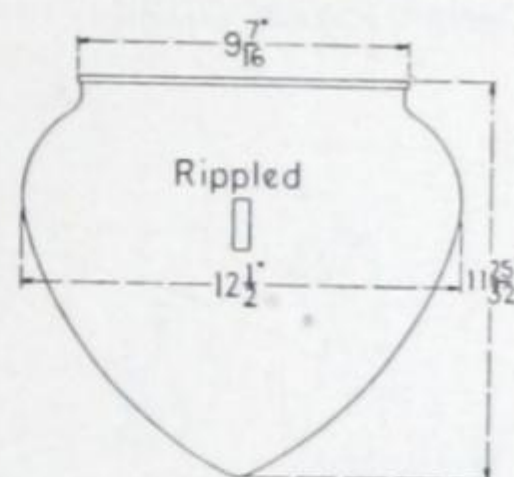
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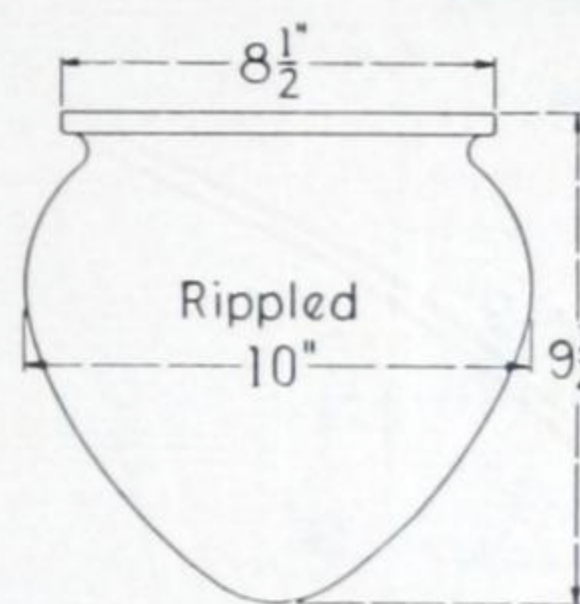
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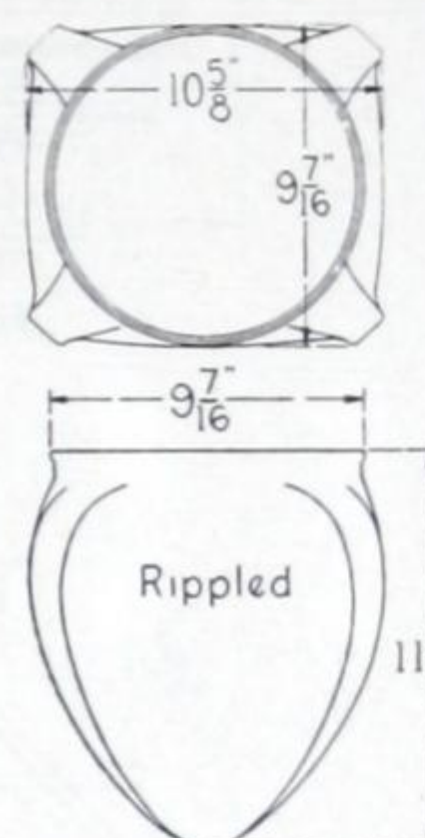
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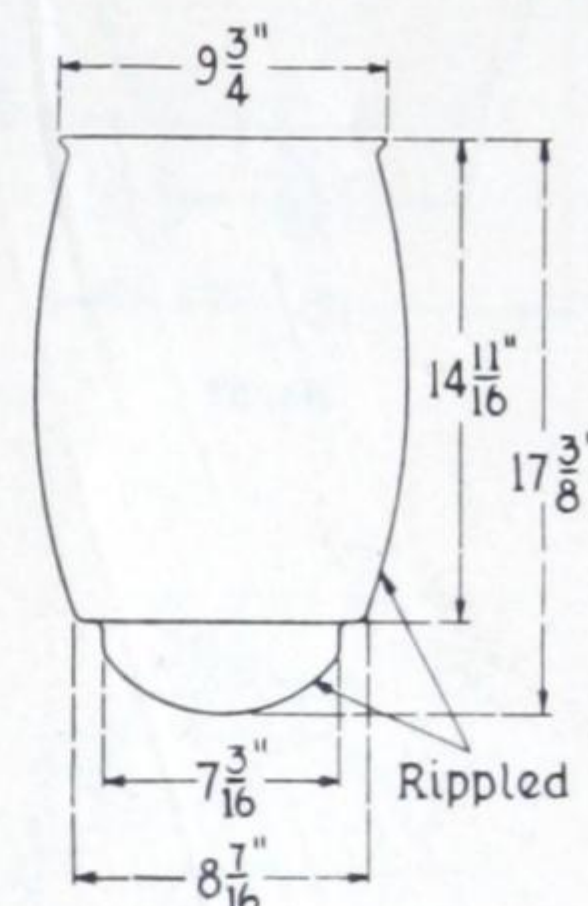
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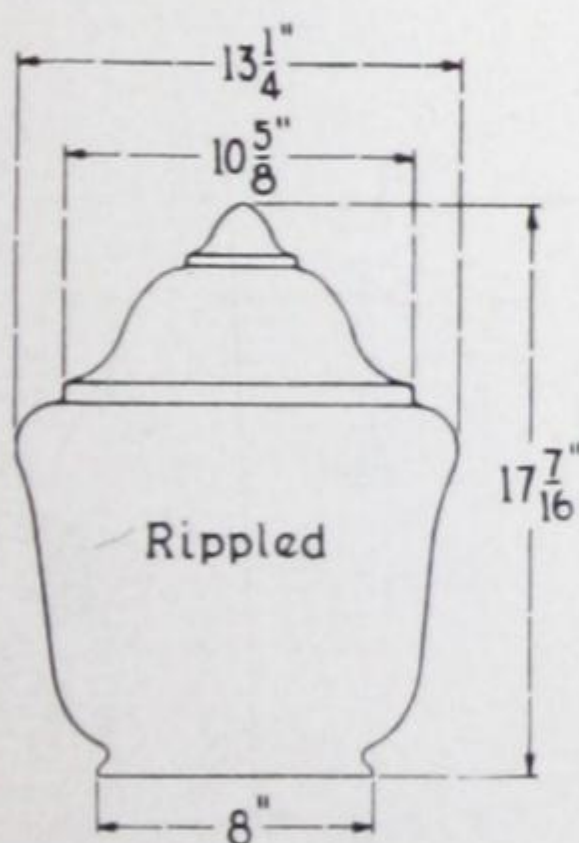
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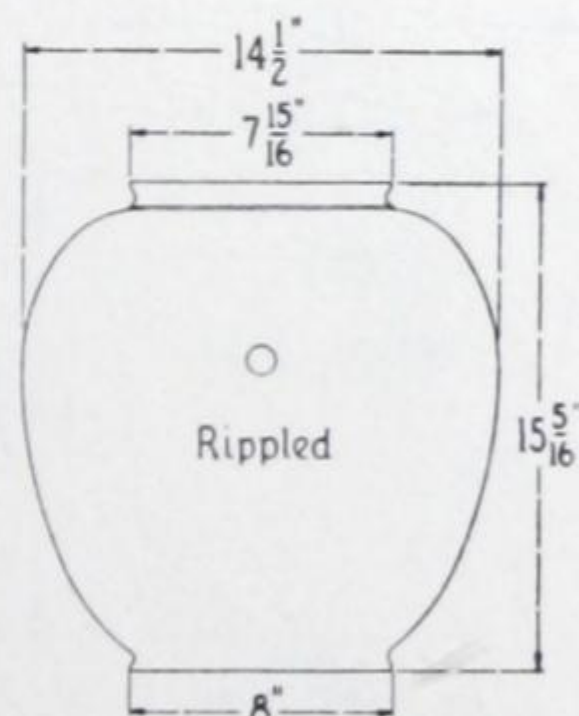
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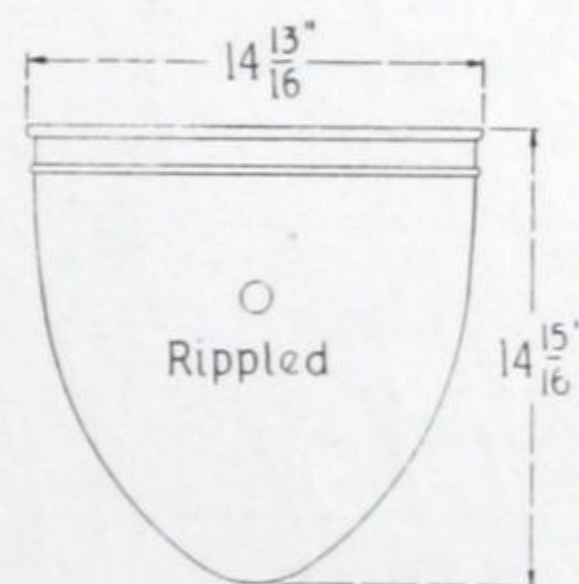
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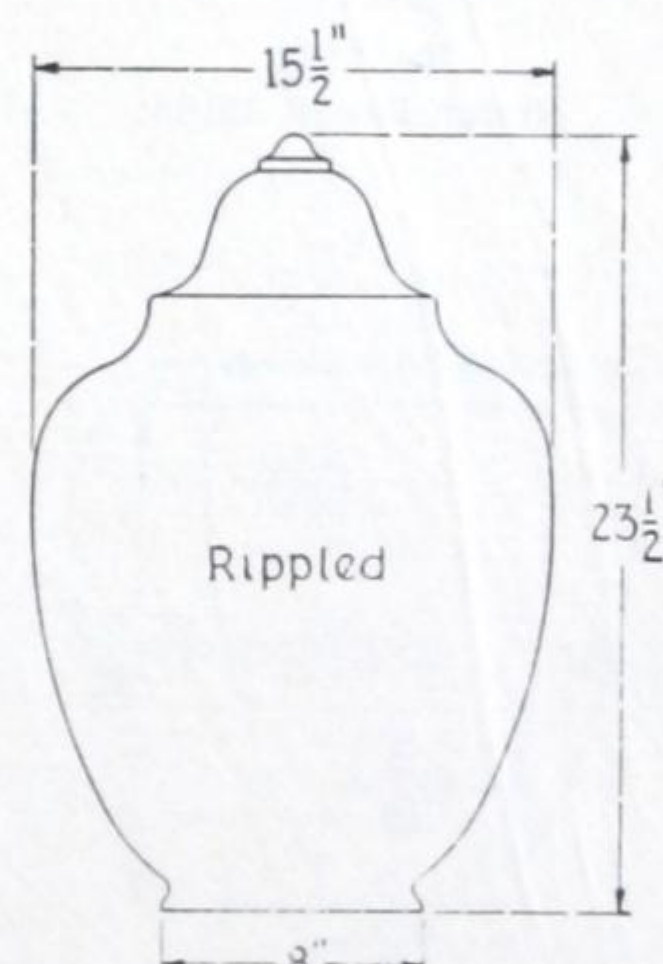
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No. 192



No. 193



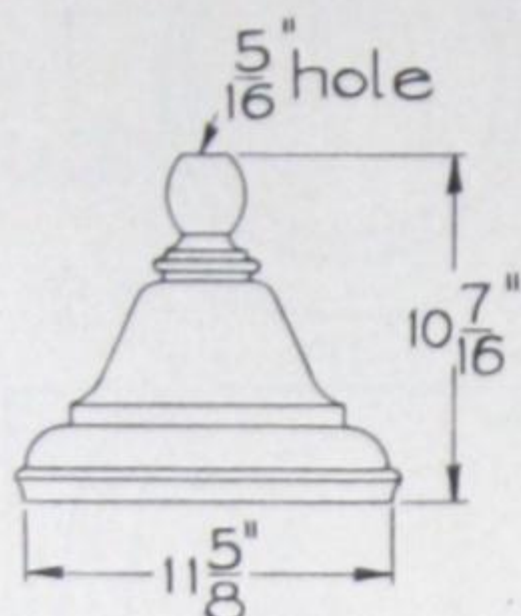
No. 199

For dimensions of globe No. 169, see page 208.
For prices refer to pages 196 and 197.

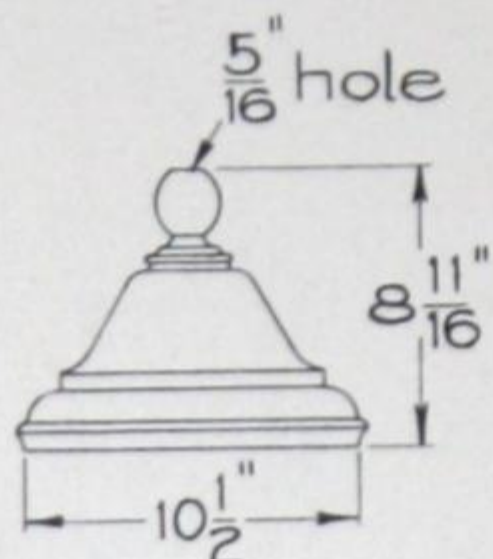
G-E STREET-LIGHTING GLASSWARE

OUTER GLOBES WITH COMPANION CANOPIES

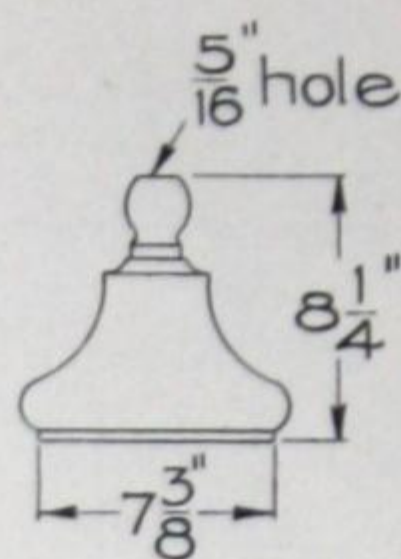
DIMENSIONS



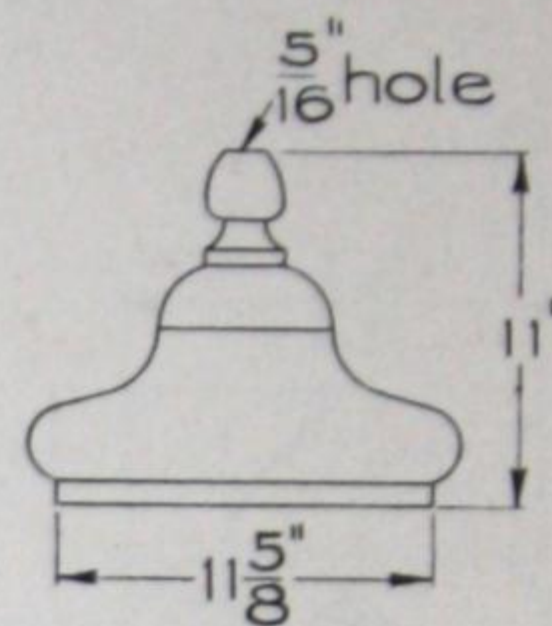
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Design Patent 55303



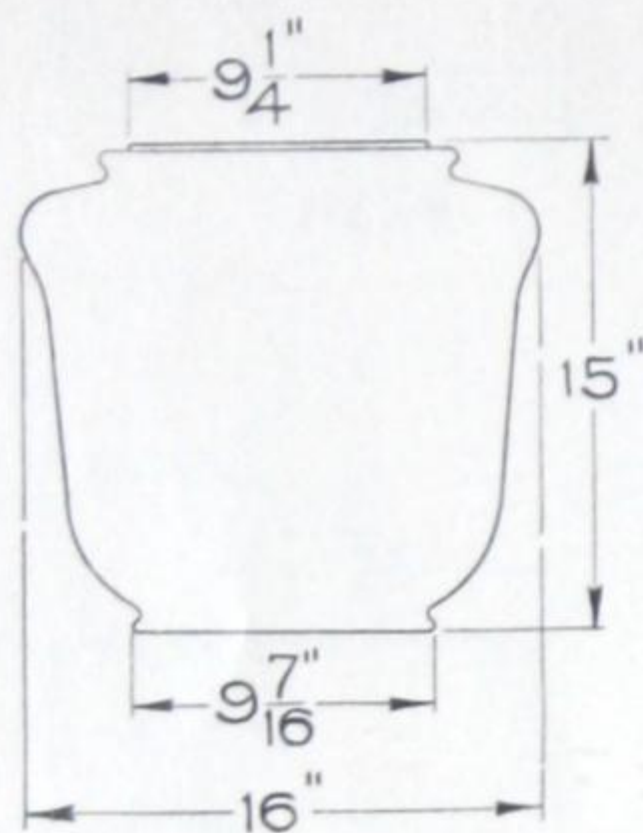
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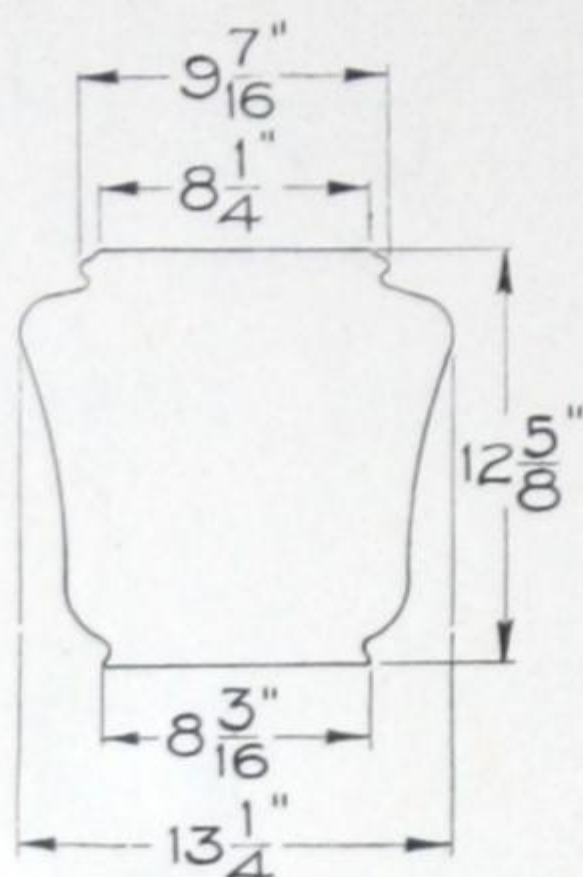
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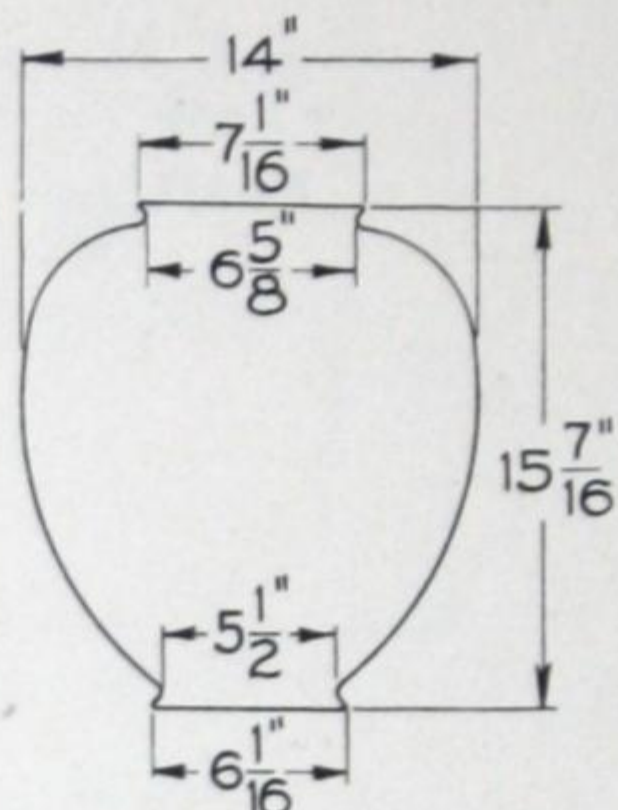
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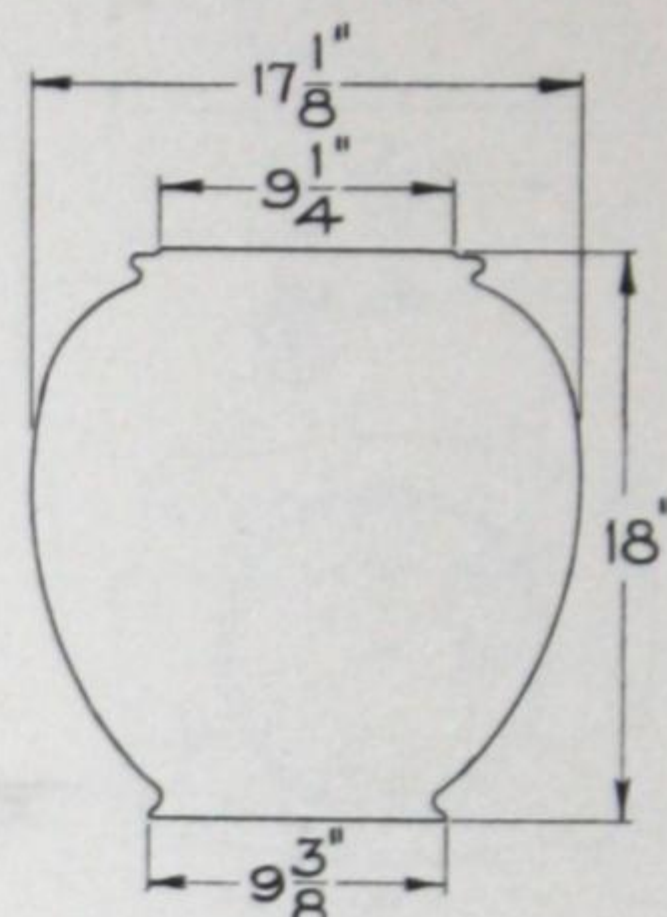
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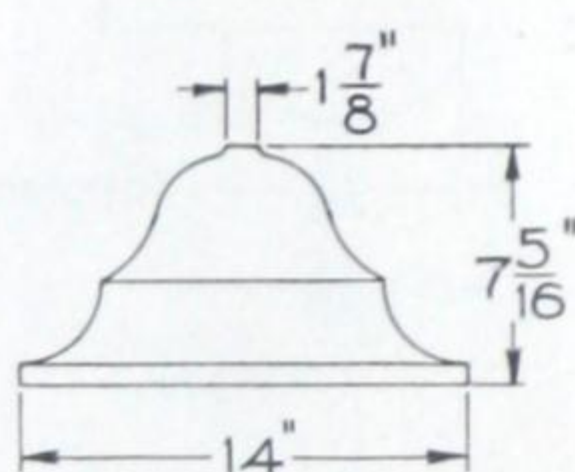
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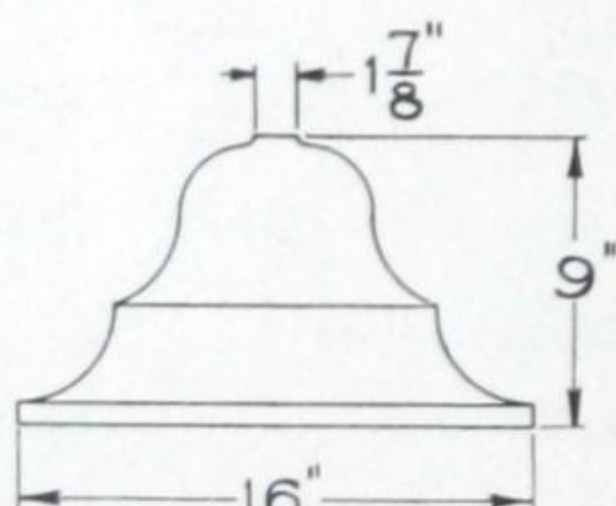
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Design Patent 50192



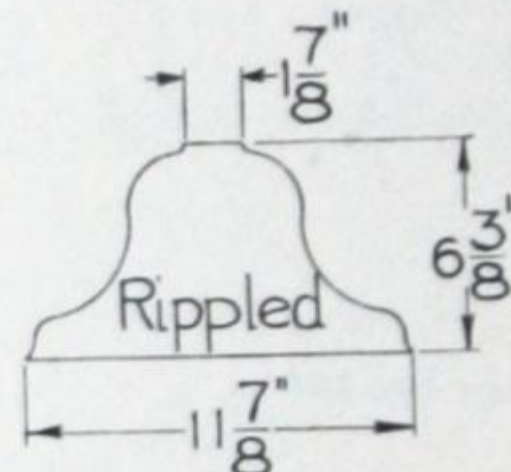
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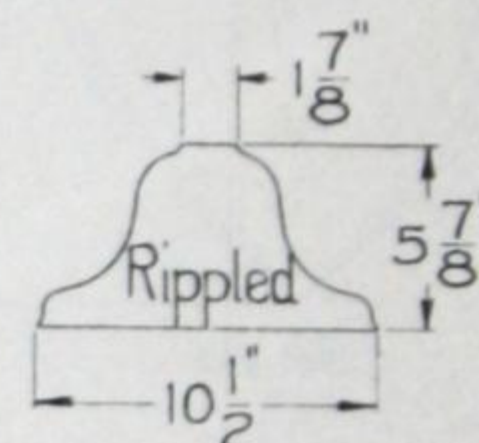
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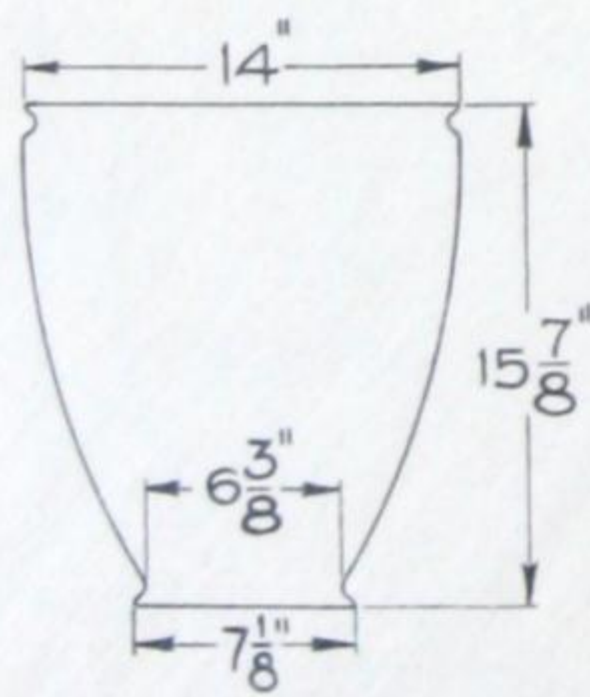
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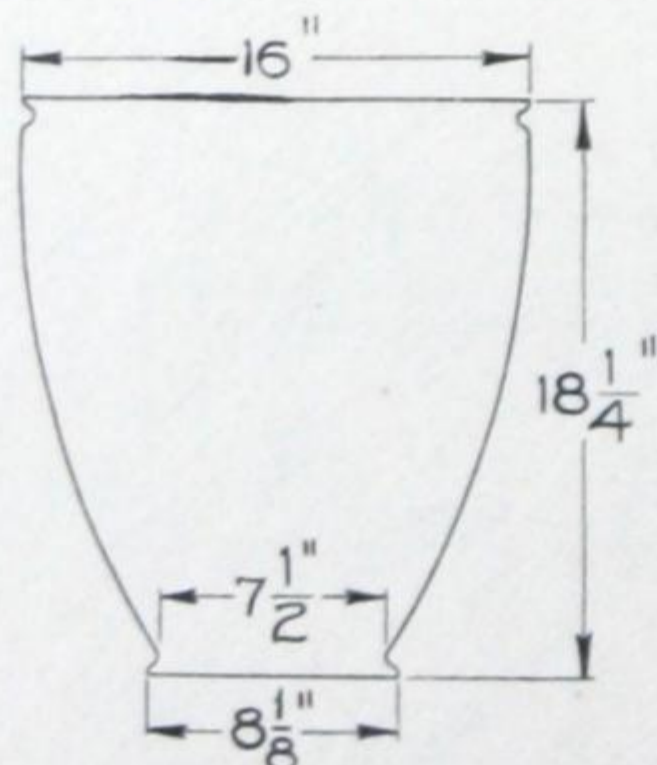
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Patent Applied for



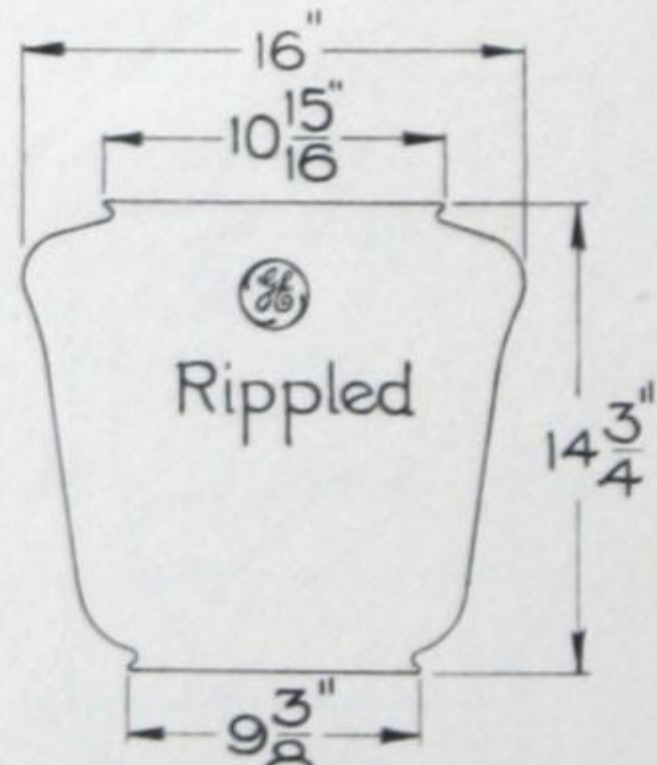
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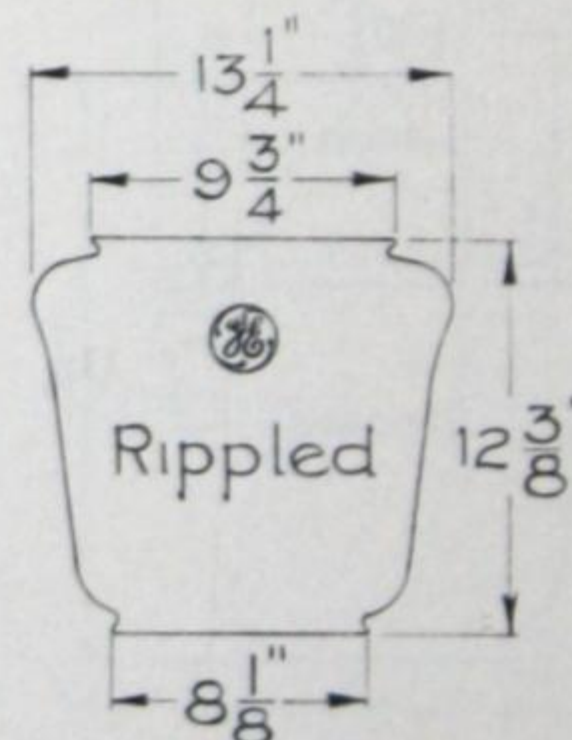
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Design Patent 57462



No. 104
Design Patent 57462



No. 107



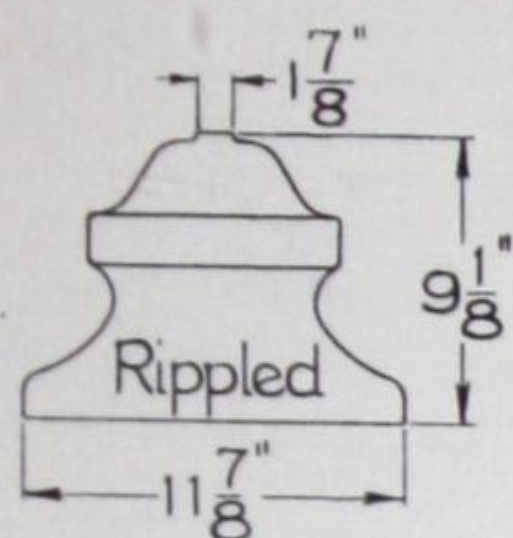
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For prices: For globes refer to page 196; for canopies refer to page 197.

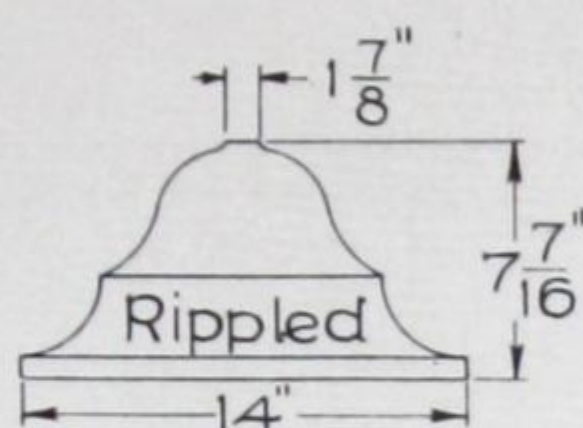
G-E STREET-LIGHTING GLASSWARE

OUTER GLOBES WITH COMPANION CANOPIES

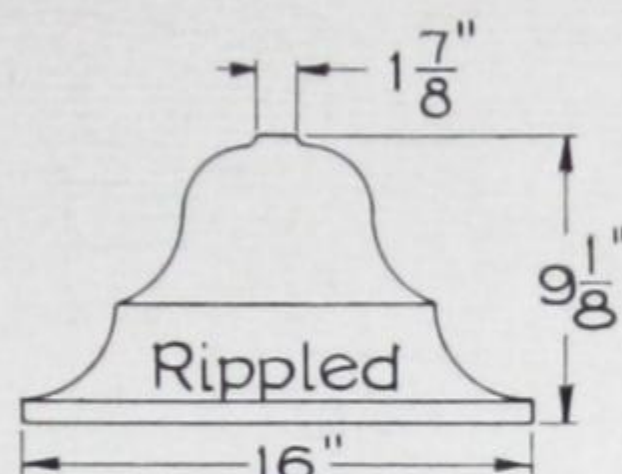
DIMENSIONS



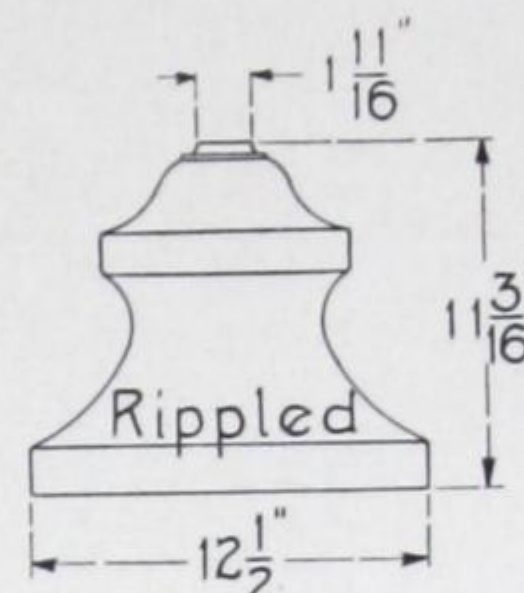
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Patent Applied for



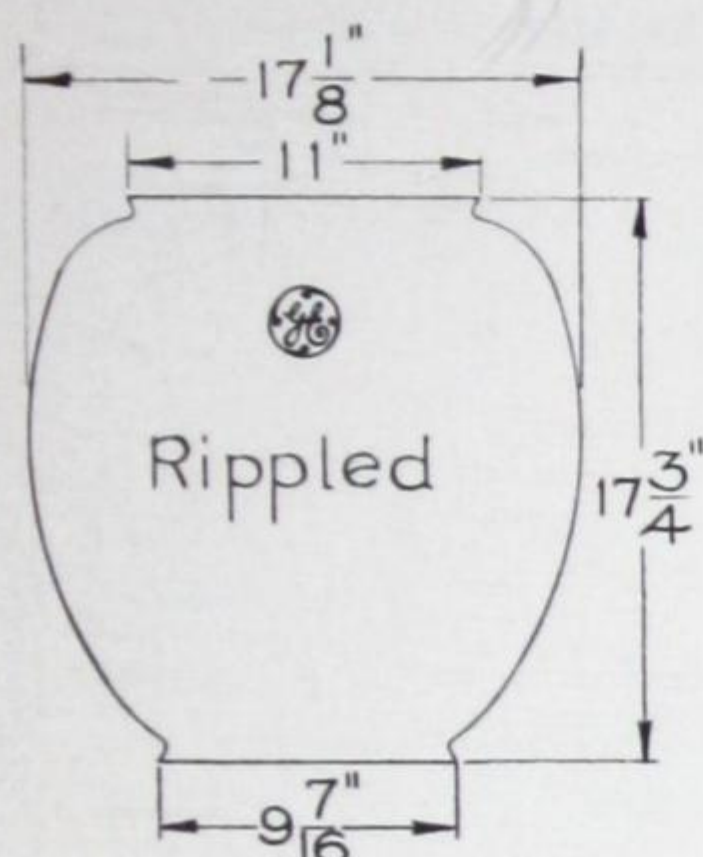
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Design Patent 55165



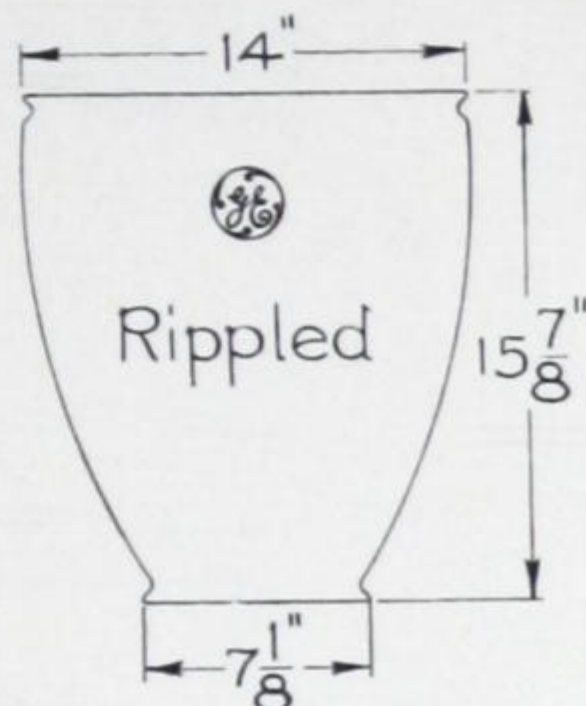
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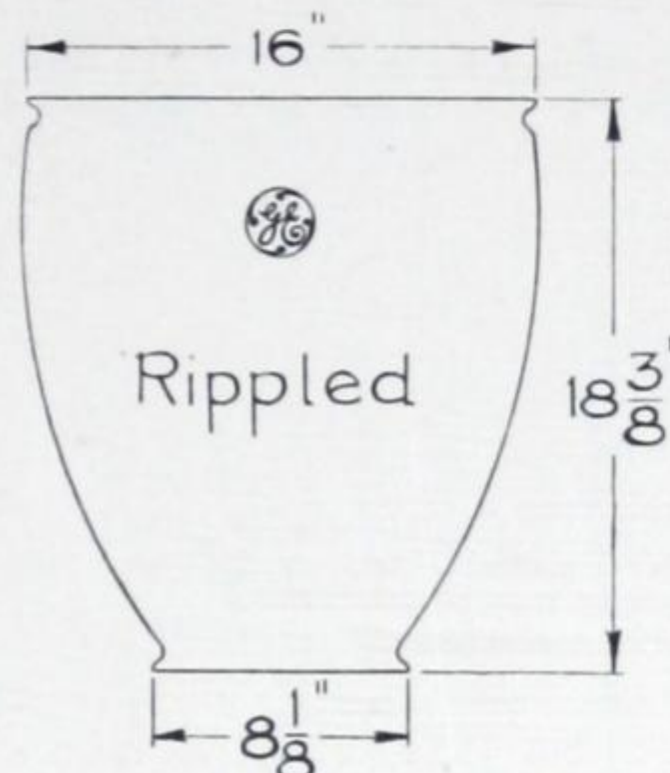
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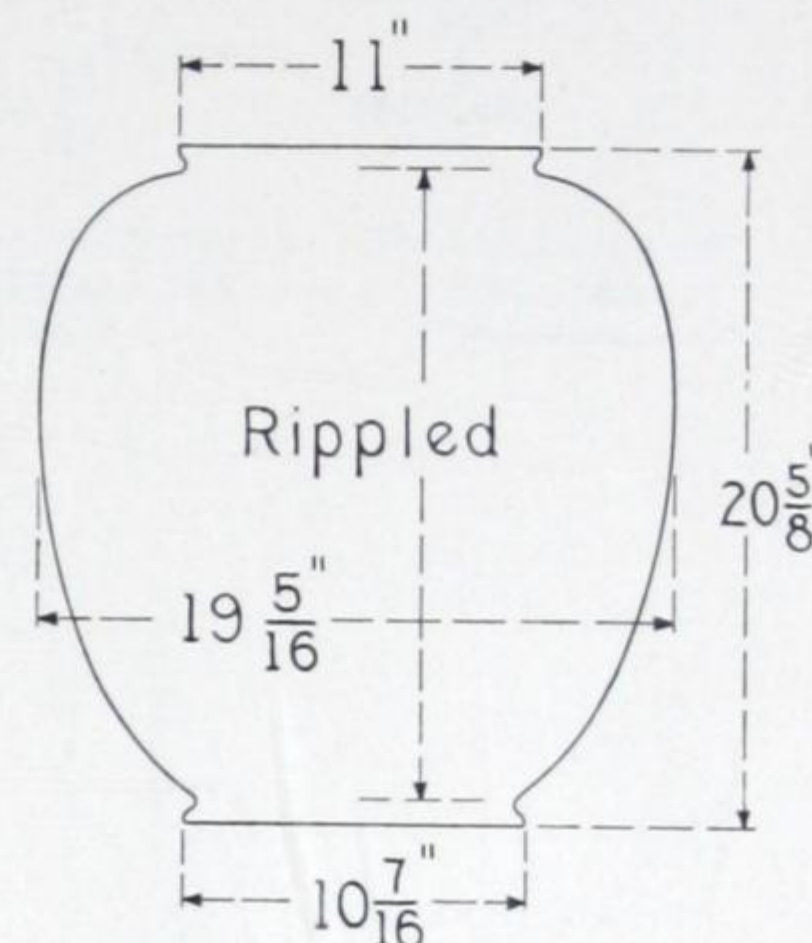
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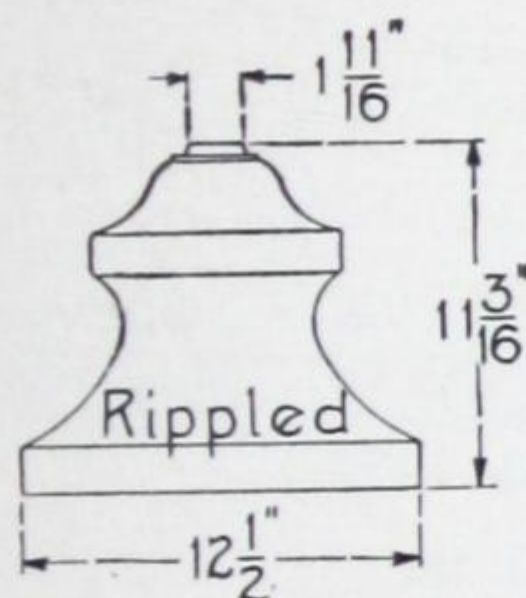
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Design Patent 57462



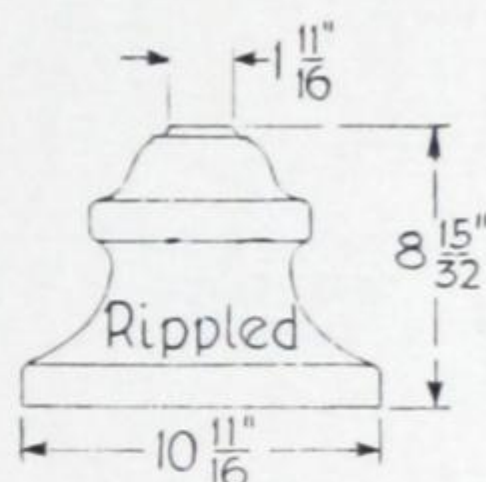
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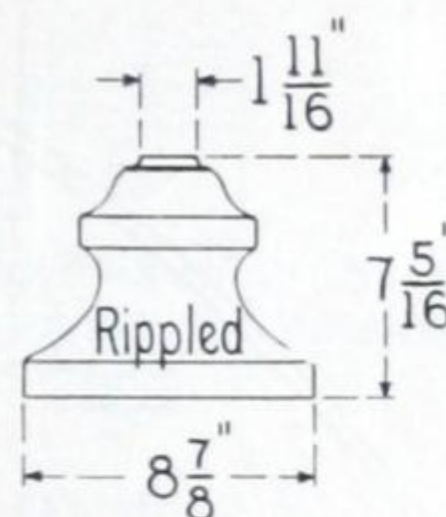
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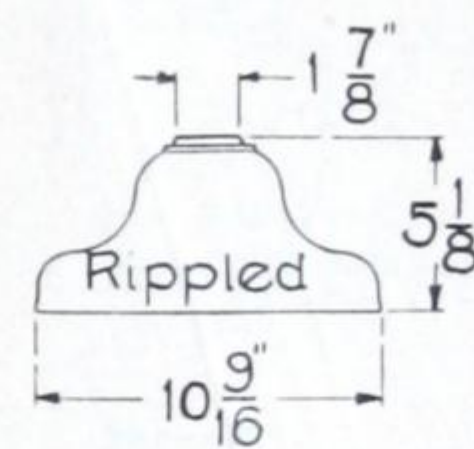
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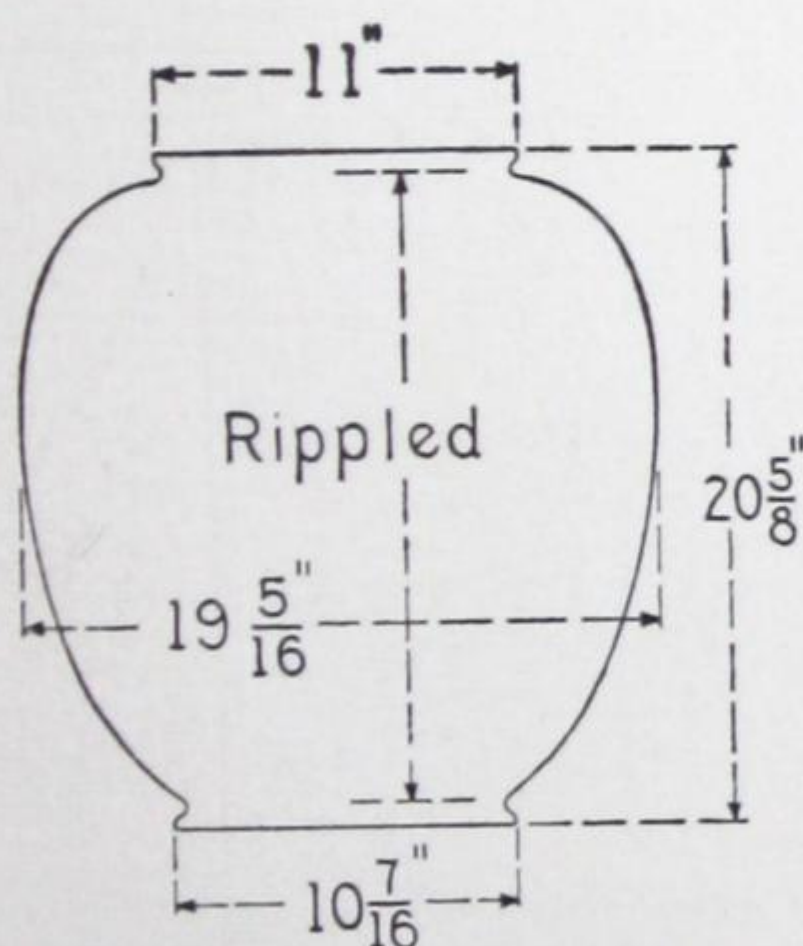
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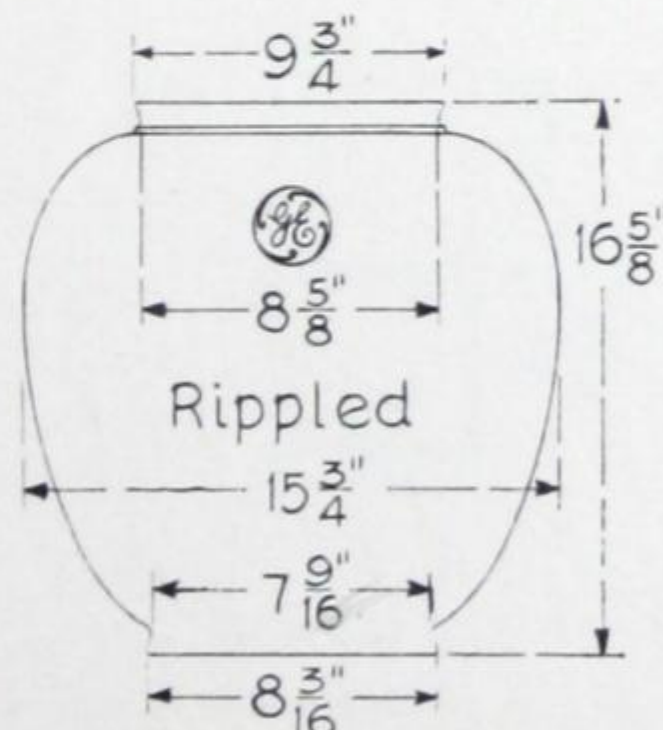
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Patent Applied for



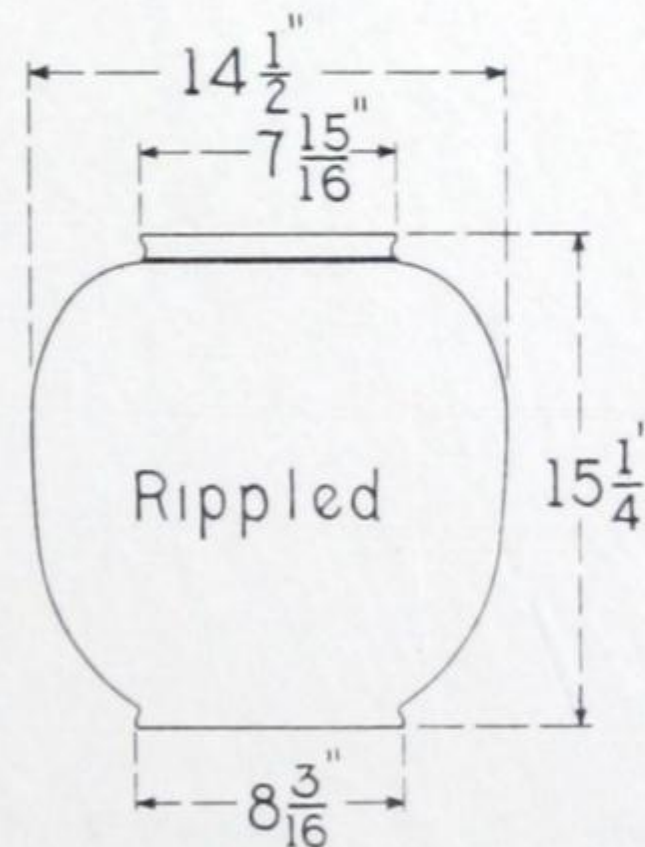
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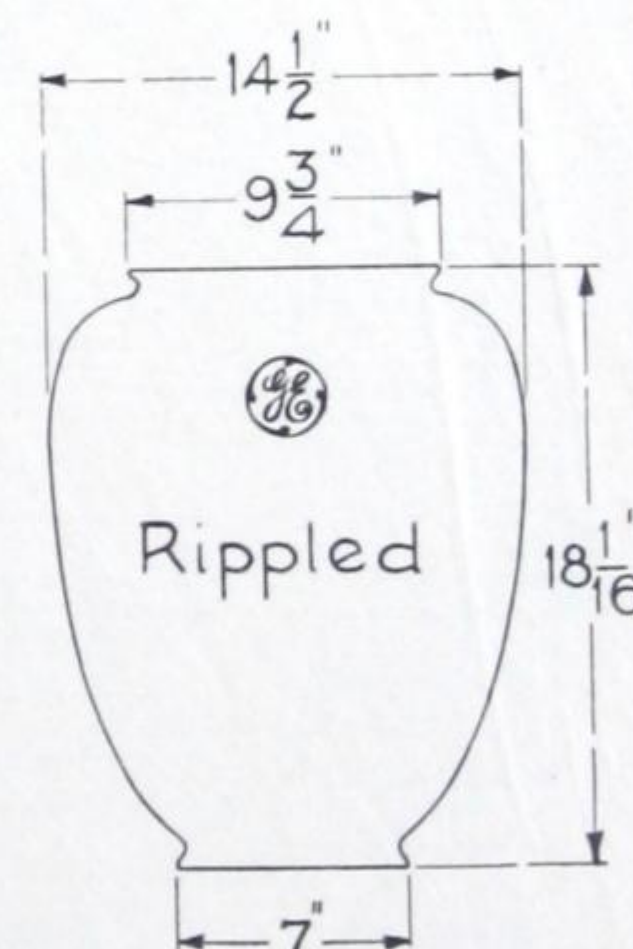
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No. 127



No. 128



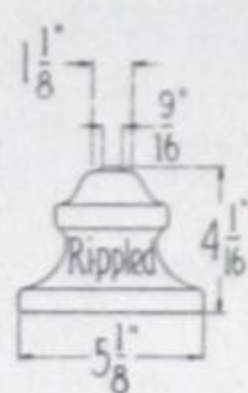
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For prices: For globes refer to page 196; for canopies refer to page 197.

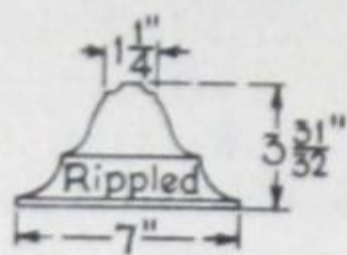
G-E STREET-LIGHTING GLASSWARE

OUTER GLOBES WITH COMPANION CANOPIES

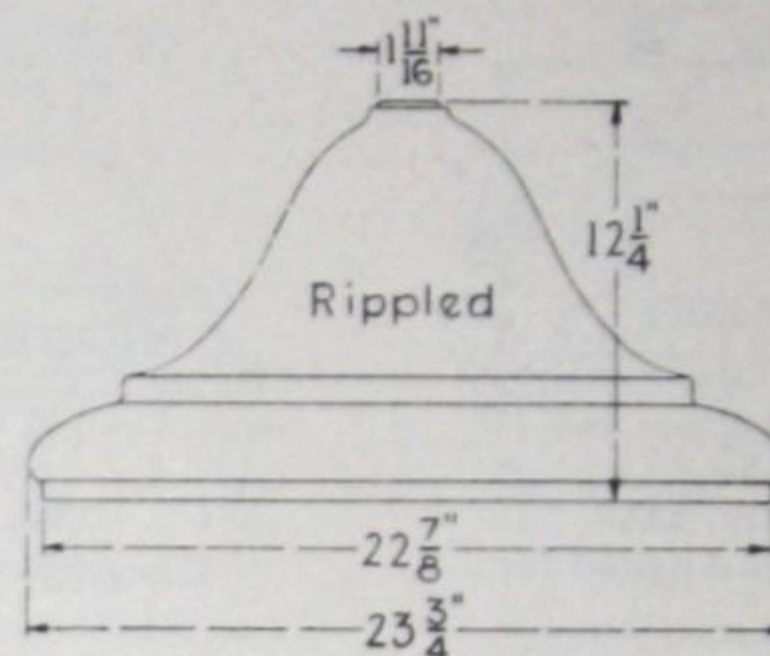
DIMENSIONS



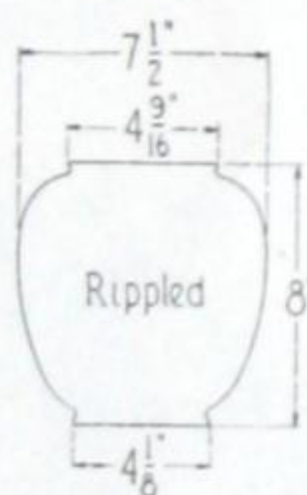
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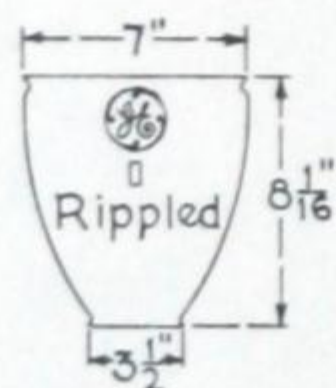
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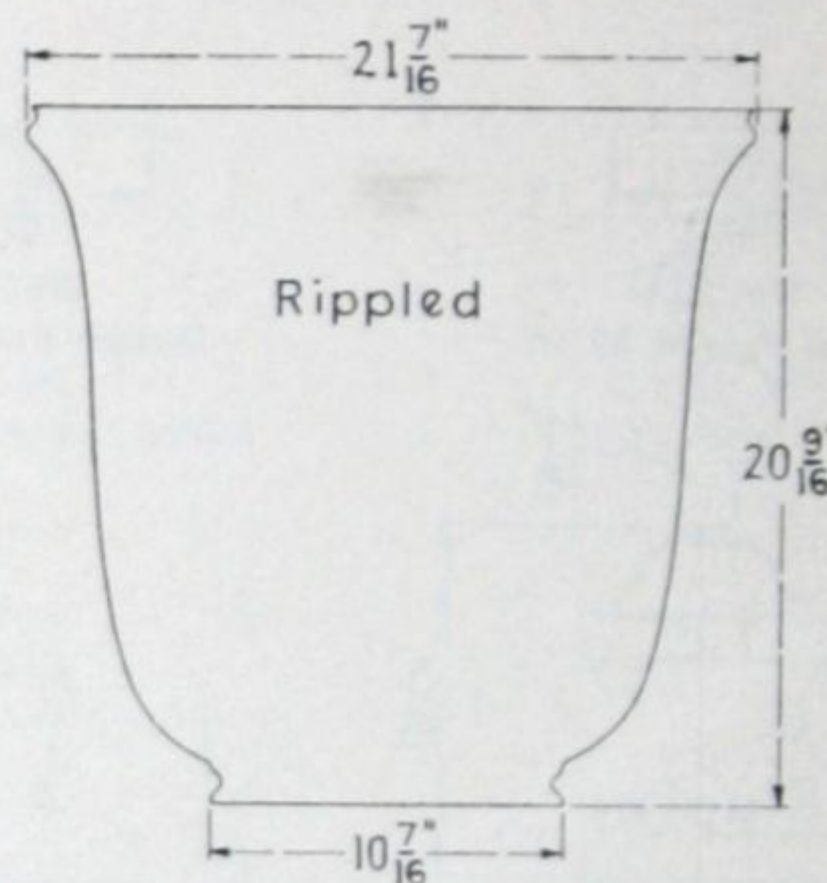
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No. 147



No. 149



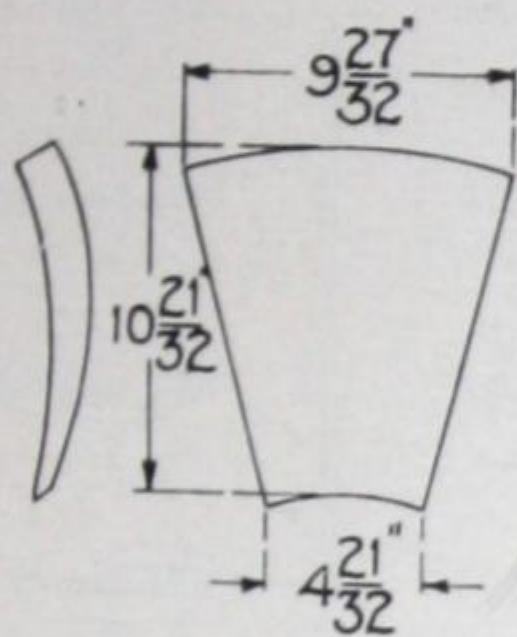
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G-E STREET-LIGHTING GLASSWARE

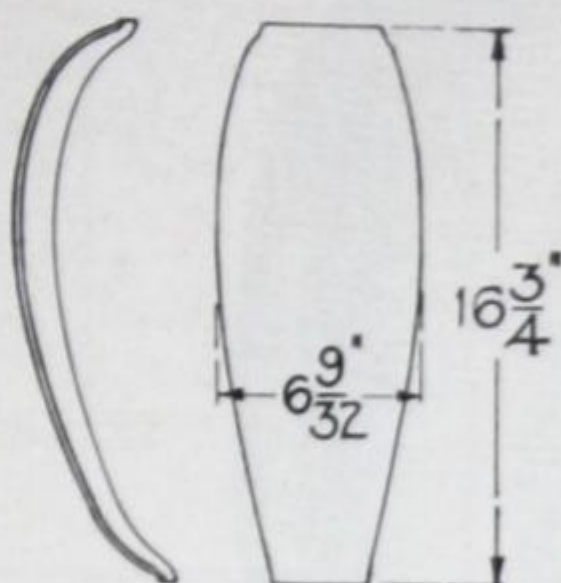
GLASS PANELS

For Ornamental Street-lighting Fixtures

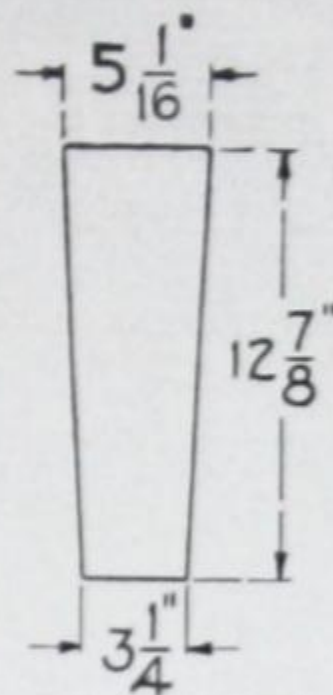
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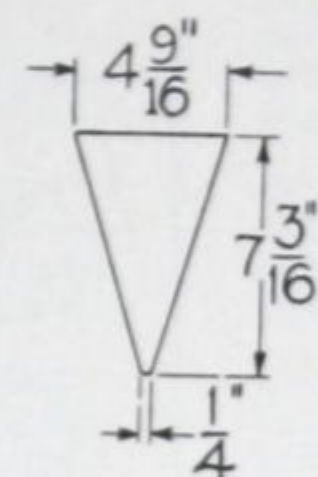
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Forms 4, 9, 12, and 16
Novalux and Luminous
Arc



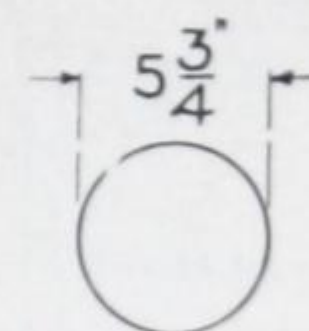
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Novalux and
Luminous Arc



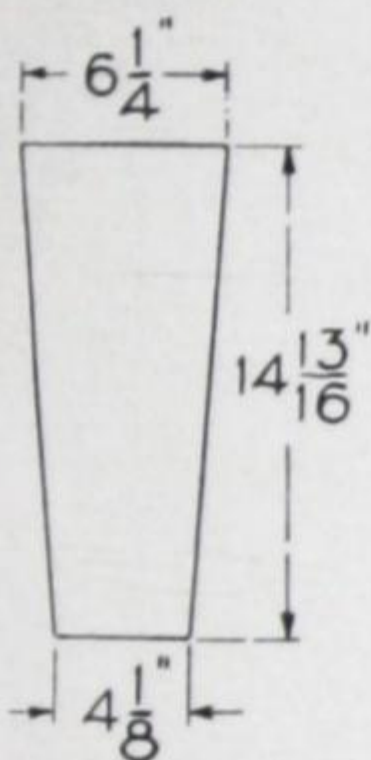
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Forms 18A and 19A
Novalux



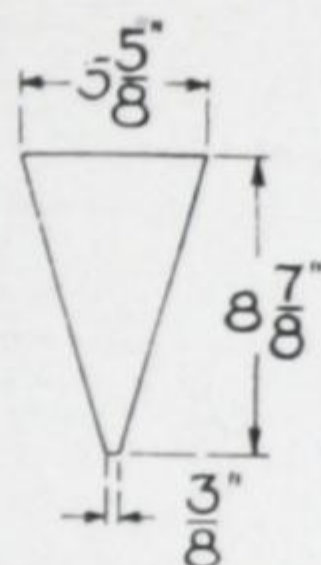
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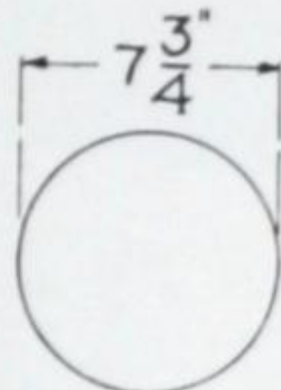
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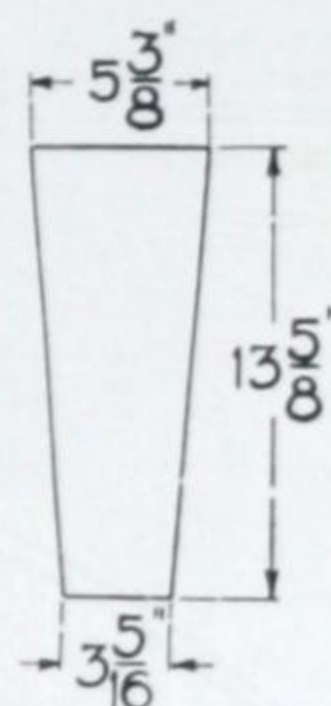
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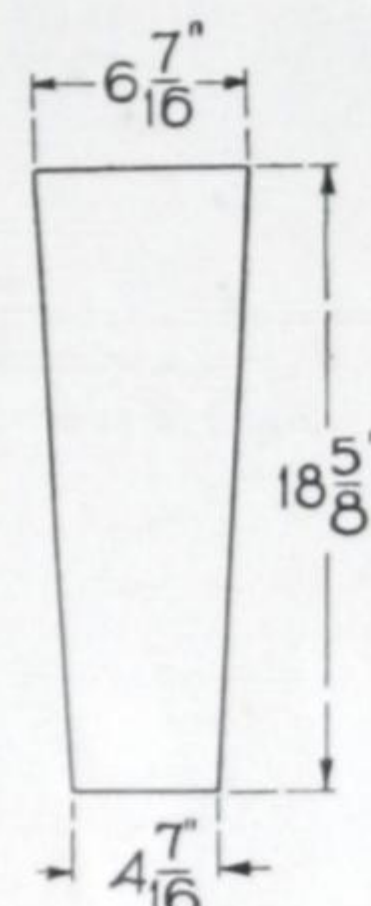
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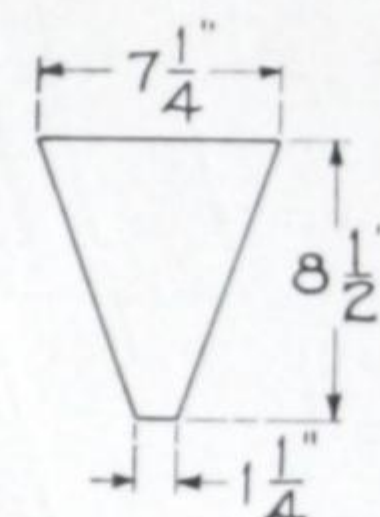
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Novalux



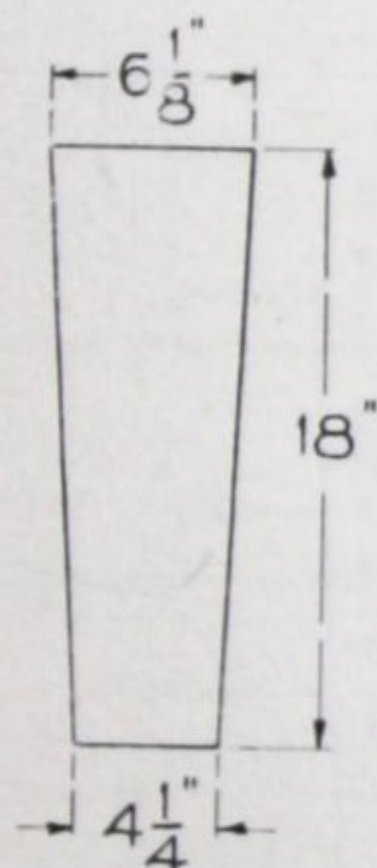
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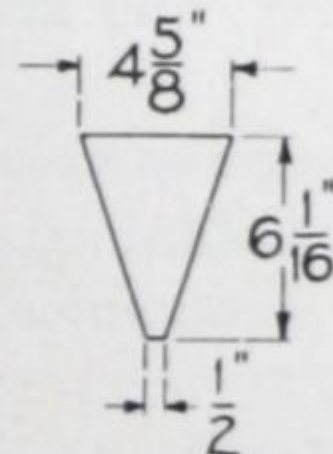
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Forms 23B, 24B and 38
Novalux



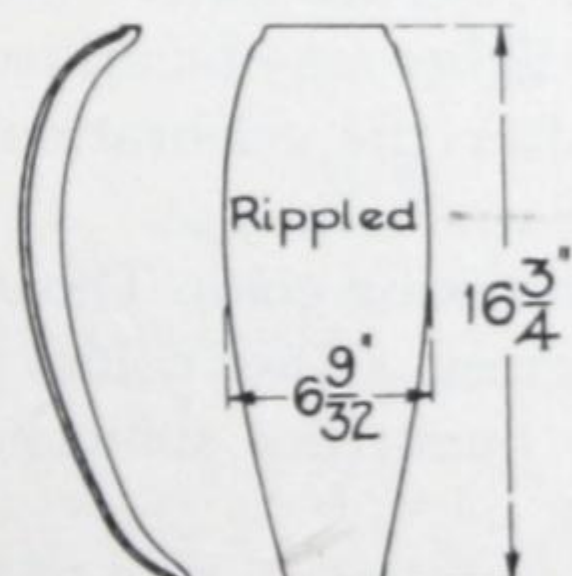
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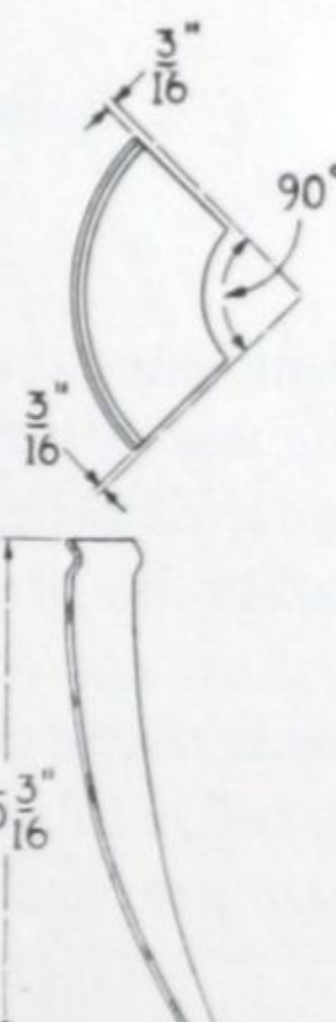
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Novalux



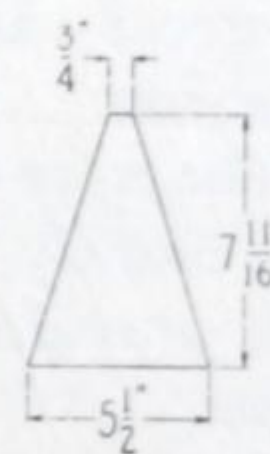
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Form 24B
Novalux



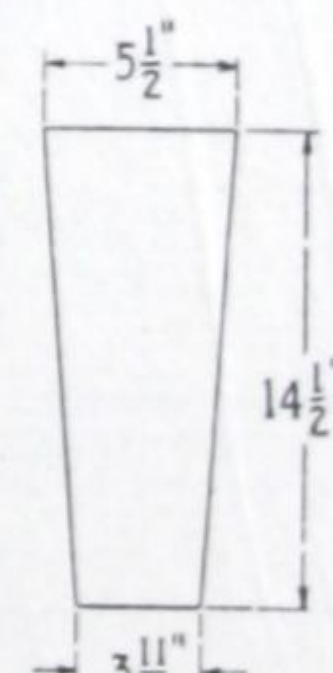
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Forms 4, 9, 12, and 16
Novalux and
Luminous Arc



No. 177
Form 33 Novalux



No. 198-C
Form 56 Novalux



No. 198-S
Form 56 Novalux

COLORED GLASS CYLINDERS

For Use in Ornamental Novalux Street-lighting Luminaires



Fig. 1
(Photograph 718719)
Colored glass cylinder with support

THE color screens listed on page 211 are for use in ornamental street-lighting luminaires. The use of these will afford decorative effects at holiday times or other special occasions. Existing street lights may be utilized as a light source and the screens can readily be stocked after the celebration is over, and kept for further use.

The color screen is made of heat-resisting glass. The more popular colors are listed, namely blue, red, amber, and green. Other colors may be obtained on request, provided they are ordered in quantities sufficient for economical production.

Color-screen supports are made of sheet steel, cadmium-plated.

COLORED GLASS CYLINDERS For Use in Ornamental Novalux Street-lighting Luminaires

For Use with Units Equipped with Globe No.	Color-screen Support		Color Screen			Combination of Color Screen and Support	
	CAT. NO.	LIST PRICE Each Class GO-51	CAT. NO.	LIST PRICE Each Class GO-51	COLOR OF SCREEN	CAT. NO.	LIST PRICE Class GO-51
37 and 107	2331829	\$1.80	3775645 3775646 3775647 2393184	\$10.00	Red Amber Green Blue	4815649G13 4815649G14 4815649G15 4815649G16	\$11.80
39 and 109	3777692	1.80	3775642 3775643 3775644 2393185	7.50	Red Amber Green Blue	4815649G1 4815649G2 4815649G3 4815649G4	9.30
97 and 118	3777693	2.70	3775645 3775646 3775647 2393184	10.00	Red Amber Green Blue	4815649G9 4815649G10 4815649G11 4815649G12	12.70
103 and 123	3777694	2.70	3775642 3775643 3775644 2393185	7.50	Red Amber Green Blue	4815649G5 4815649G6 4815649G7 4815649G8	10.20
104 and 124	3770307	2.70	3775645 3775646 3775647 2393184	10.00	Red Amber Green Blue	4815649G17 4815649G18 4815649G19 4815649G20	12.70
127	3770308	3.00	3775645 3775646 3775647 2393184	10.00	Red Amber Green Blue	4815649G21 4815649G22 4815649G23 4815649G24	13.00

DIMENSIONS

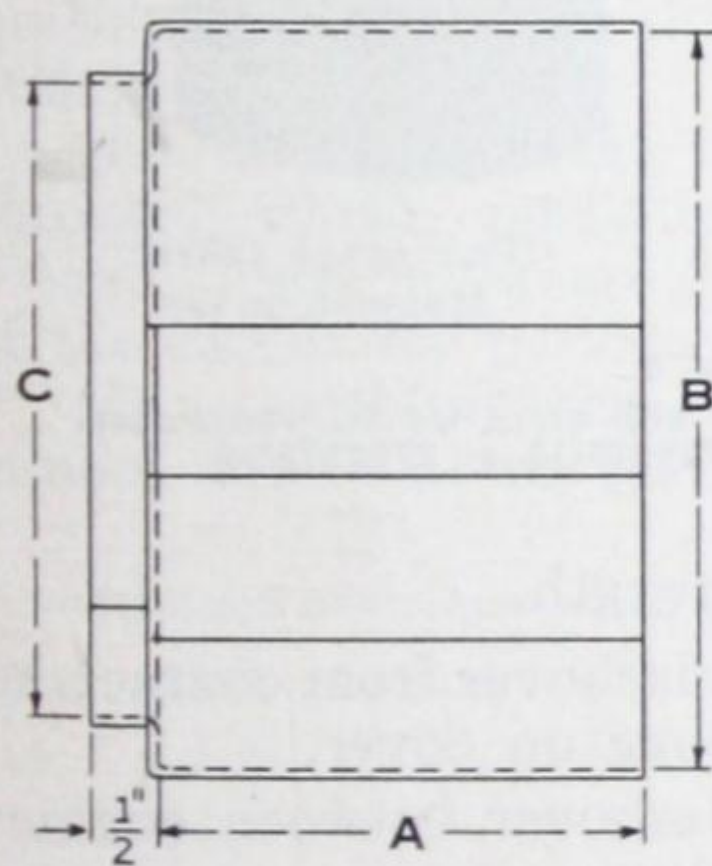


Fig. 2
Color-screen support

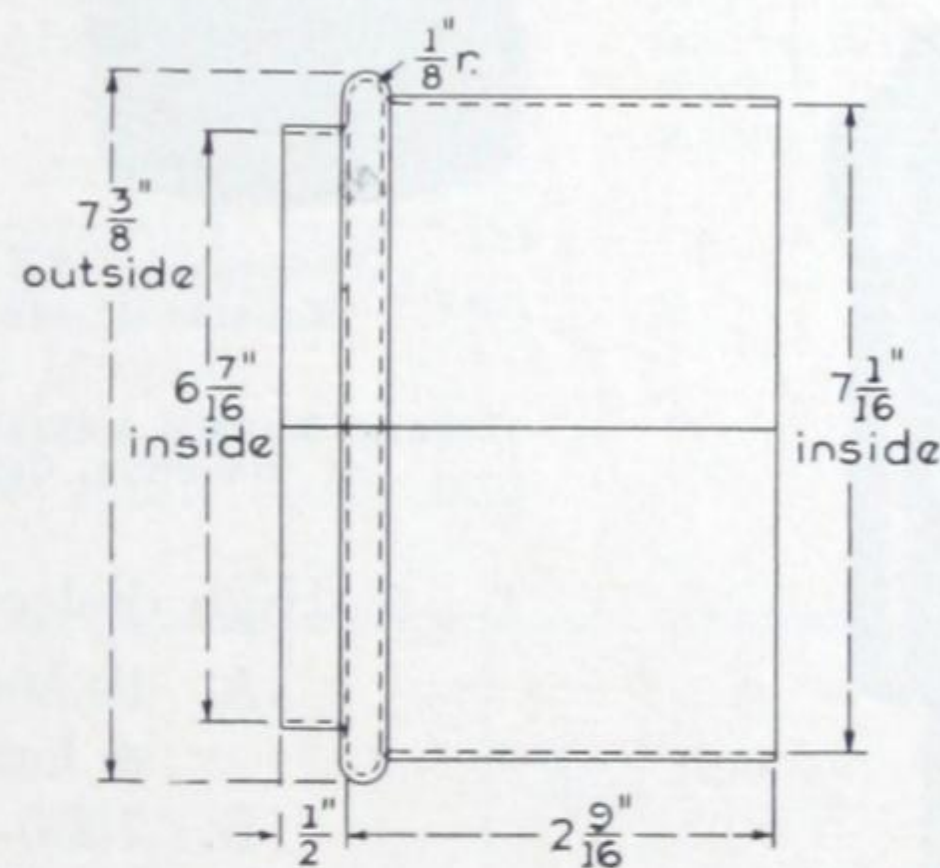


Fig. 3
Color-screen support

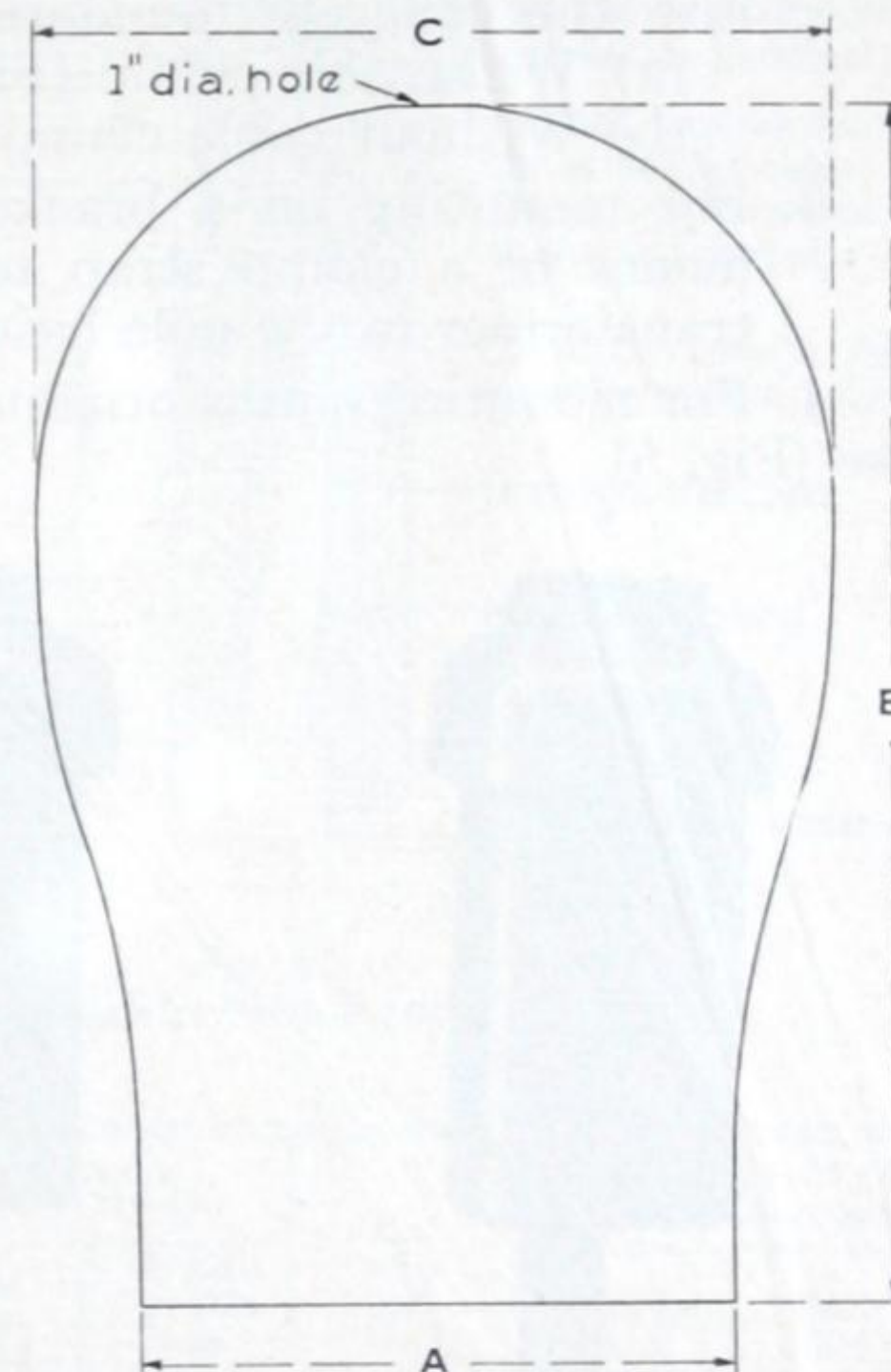


Fig. 4
Color screen

CAT. NO.	FIG. NO.	APPROX DIMENSIONS IN INCHES		
		A	B	C
2331829	2	1 5/8	7 5/8	6 7/16
3770307	2	3 1/4	7 1/16	5 15/16
3770308	3	...	...	...
3777692	2	1 13/16	7 1/16	5 1/32
3777693	2	3 15/16	7 5/8	6 7/16
3777694	2	3 3/4	5 13/16	5 1/32

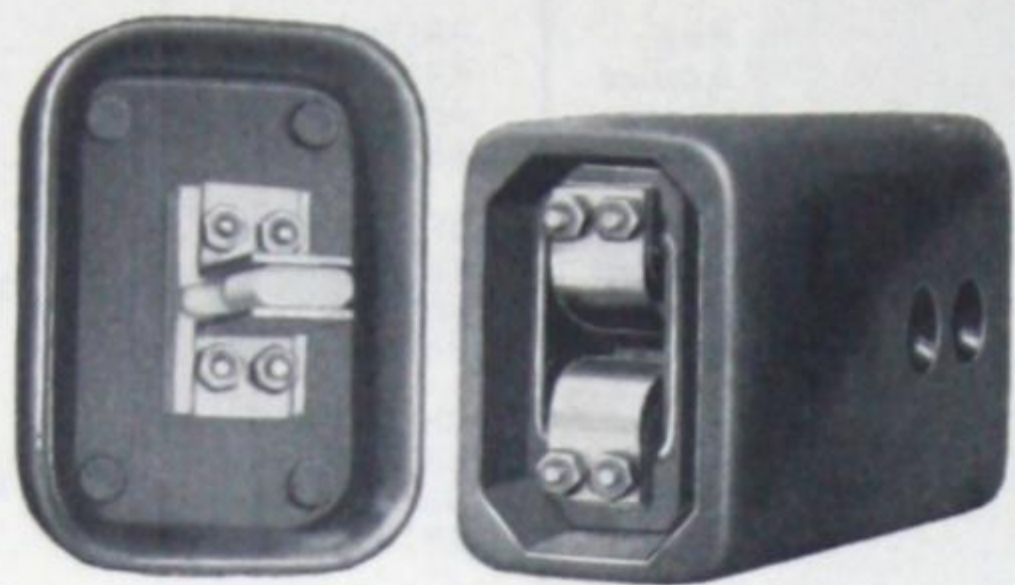
CAT. NO.	APPROX DIMENSIONS IN INCHES (FIG. 4)		
	A	B	C
2393184	7 1/16	12 7/8	8
2393185	5 5/8	11 3/16	7
3775642			
3775643			
3775644	7 1/16	12 7/8	8
3775645			
3775646			
3775647			

G-E NOVALUX CUTOUTS

For Ornamental Street-lighting Units

FORM F-100-B POTHEAD CUTOUT

The Form F-100-B disconnecting pothead cutout is designed for use with ornamental series street-lighting circuits for mounting in the base of the smaller lighting standards.



(Photograph 717964)

Fig. 1

Form F-100-B1 pothead cutout only,
Cat. No. 3732073G1

APPLICATION

This cutout may be used in four ways:

1. By itself (Fig. 1).
2. For mounting on a bracket or spade set into the concrete foundation of the pole.
 - (a) With cable clamp (Fig. 2).
 - (b) Without cable clamp (Fig. 3).
3. For mounting on a bracket, attached by means of a clamp strap to a suitable IL transformer in the pole base (Fig. 4).
4. For mounting on the ornamental pole in the base (Fig. 5).



(Photograph 717965)

Fig. 2

Form F-100-B pothead cutout
with spade bracket and cable
clamp, Cat. No. 3732073G2



Fig. 3

Form F-100-B pothead cutout
with spade bracket and with-
out cable clamp
Cat. No. 3732073G7

ADVANTAGES

1. May be mounted in the base of the smaller ornamental poles.
2. Provides a means of disconnecting individual lamps without breaking the main circuit.
3. The line cables can be bonded to the two clamps provided for the double purpose of bonding and binding the cables in position.



(Photograph 718371)

Mounted on side

(Photograph 718372)

Mounted on top

Fig. 4

Form F-100-B pothead cutout with strap for IL transformer
mounting, Cat. No. 3732073G5 or 3732073G6

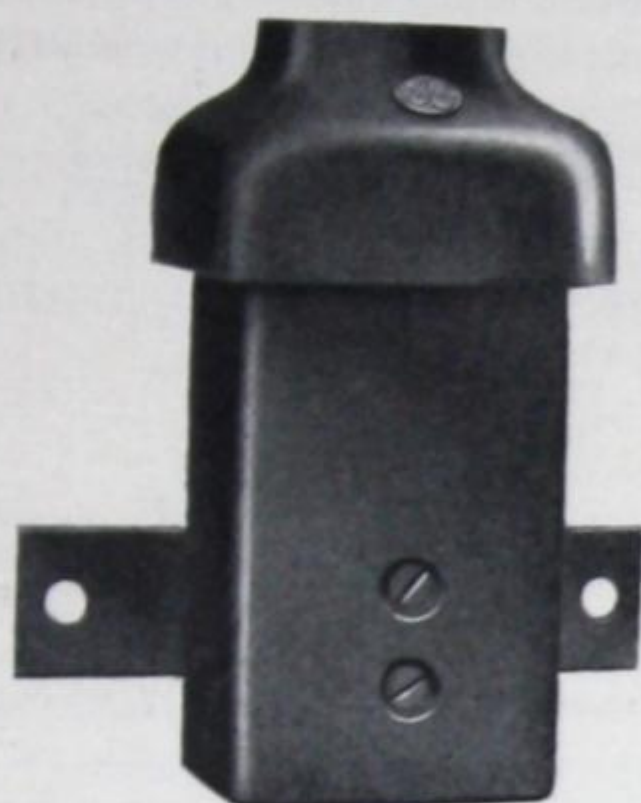
4. High dielectric strength.
 - A. 19,500-volt flashover from contacts to a hand groove on cover.
 - B. 7000-volt flashover between contact blades of plug.
 - C. 37,000-volt puncture from contacts to spade mounting with cover off; 35,500-volt flashover from contacts to spade mounting with cover on.
 - D. 28,000-volt flashover from contacts to bracket supporting cutout on an IL transformer, cover on; 30,000-volt flashover from contacts to bracket as above with cover off.

All tests on these cutouts were made under normal dry conditions.

G-E NOVALUX CUTOUTS

For Ornamental Street-lighting Units

FORM F-100-B POTHEAD CUTOUT



(Photograph 717608)

Fig. 5

Form F-100-B pothead cutout with bracket and gasket for mounting on pole in base, Cat. No. 3732073G4

DESCRIPTION AND OPERATION

The Form F-100-B cutout consists of two sections, the box and the plug, both made of a special-process porcelain. The plug is equipped with flat contact strips, insulated from each other. Provision is made at the top part of plug so that insulating compound can be poured in round the leads. The box contains four flat phosphor-bronze receptacle contacts reinforced by phosphor-bronze springs. Contacts are assembled within an air expulsion chamber.

If it is desired to use this cutout for disconnecting several lamps, this chamber may be filled with G-E No. 21 oil.

At the top of the box, a hole is provided through which insulating compound can be poured. Two holes are provided in the bottom of the cutout for parkway cable (Fig. 6).

In assembling the line cables, the two terminals, that will be found in a small cloth bag

attached to the cutout, should first be soldered to the cable. The outside armor of the cable can then be removed to a point flush with the top of the bottom clamp on the supporting bracket.

The cutout as shown in Fig. 1, 2, and 7 is held in place by two screws passing through a boss in the box and threaded into $\frac{1}{4}$ -inch—20 tapped holes in the pole or other type of support. (When ordering poles or other types of supports, requisition should contain complete information with respect to drilling and tapping.)

The method of mounting the cutout on the Type IL transformer is illustrated by Fig. 4 and 9. (When this method of mounting is used, extra leads are required on the transformer.)

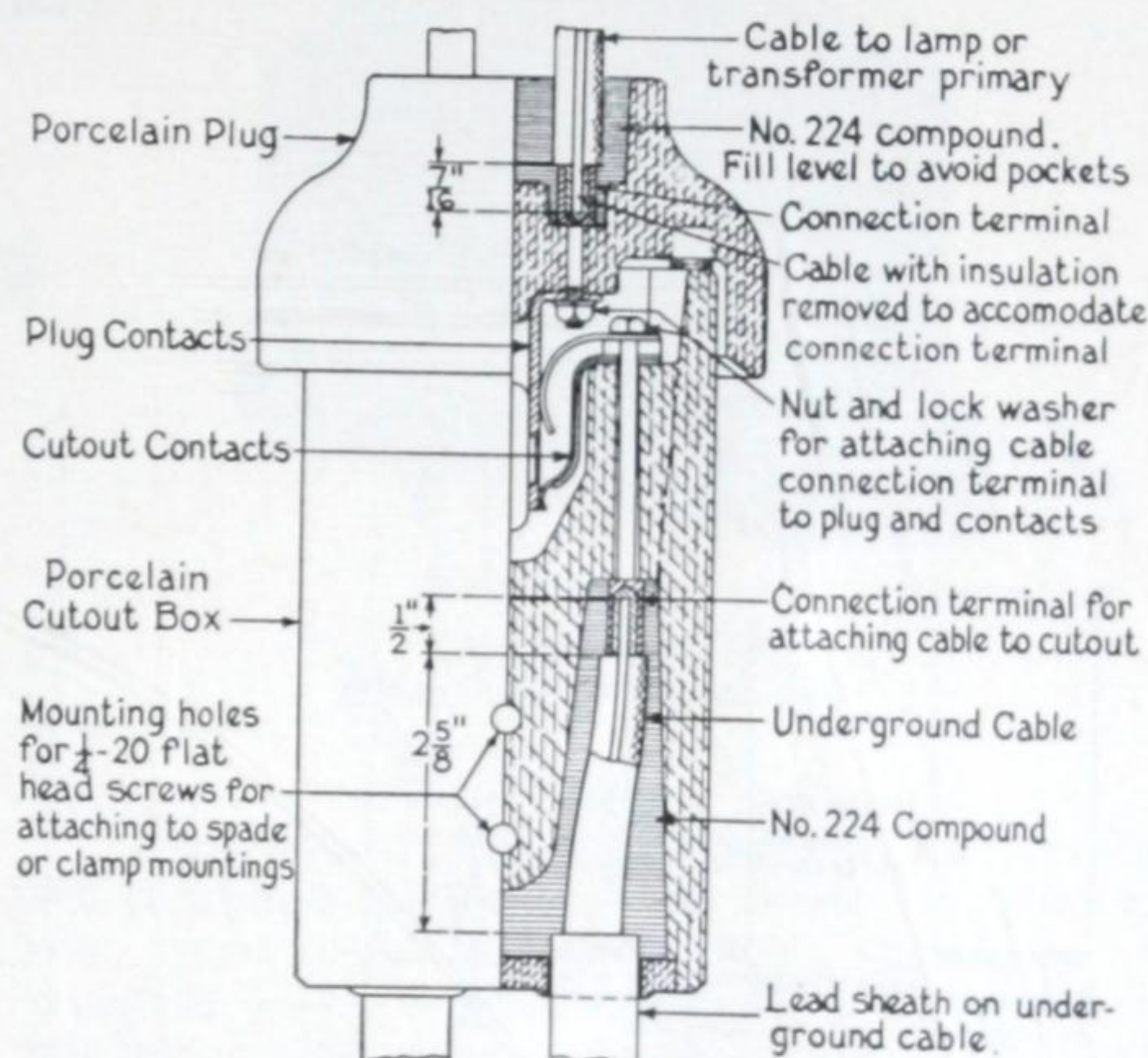


Fig. 6

Sectional view of Form F-100-B cutout

DESCRIPTION	FIG. NO.	CAT. NO.	LIST PRICE Class GO-51		STD PKG QTY	APPROX WT IN LB Without Compound	
			Less Com- pound	With No. 224 Com- pound		Std Pkg Ship.	Each Net
Pothead cutout only.....	1, 7	3732073G1	\$8.20	\$8.70	10	125	9
Cutout with spade bracket and cable clamp for mounting in base of ornamental pole.....	2, 8	3732073G2	13.20	13.70	10	200	13
Cutout with spade bracket, less cable clamp, for mounting in base of ornamental pole.....	3, 8	3732073G7	12.70	13.20	10	...	12
Cutout with bracket for mounting on Type IL transformer with $5\frac{1}{2}$ -in. diameter can.....	4, 10	† 3732073G5	11.00	11.50	10	140	10
Cutout with bracket for mounting on Type IL transformer with $5\frac{1}{2}$ -in. and $7\frac{5}{8}$ -in. diameter can.....	4, 11	† 3732073G6	11.00	11.50	10	140	10
Cutout with bracket and gasket, for mounting on ornamental pole	5, 9	3732073G4	9.60	10.10	10	140	10

† Transformer must have extra-length leads.

This cutout with the contact chamber filled with G-E No. 21 oil should be used in all cases where it is desired to operate two, but NOT MORE than three, ornamental luminous arc lamps or their equivalent in Novalux fixtures.

G-E NOVALUX CUTOUTS

For Ornamental Street-lighting Units

FORM F-100-B POTHEAD CUTOUTS

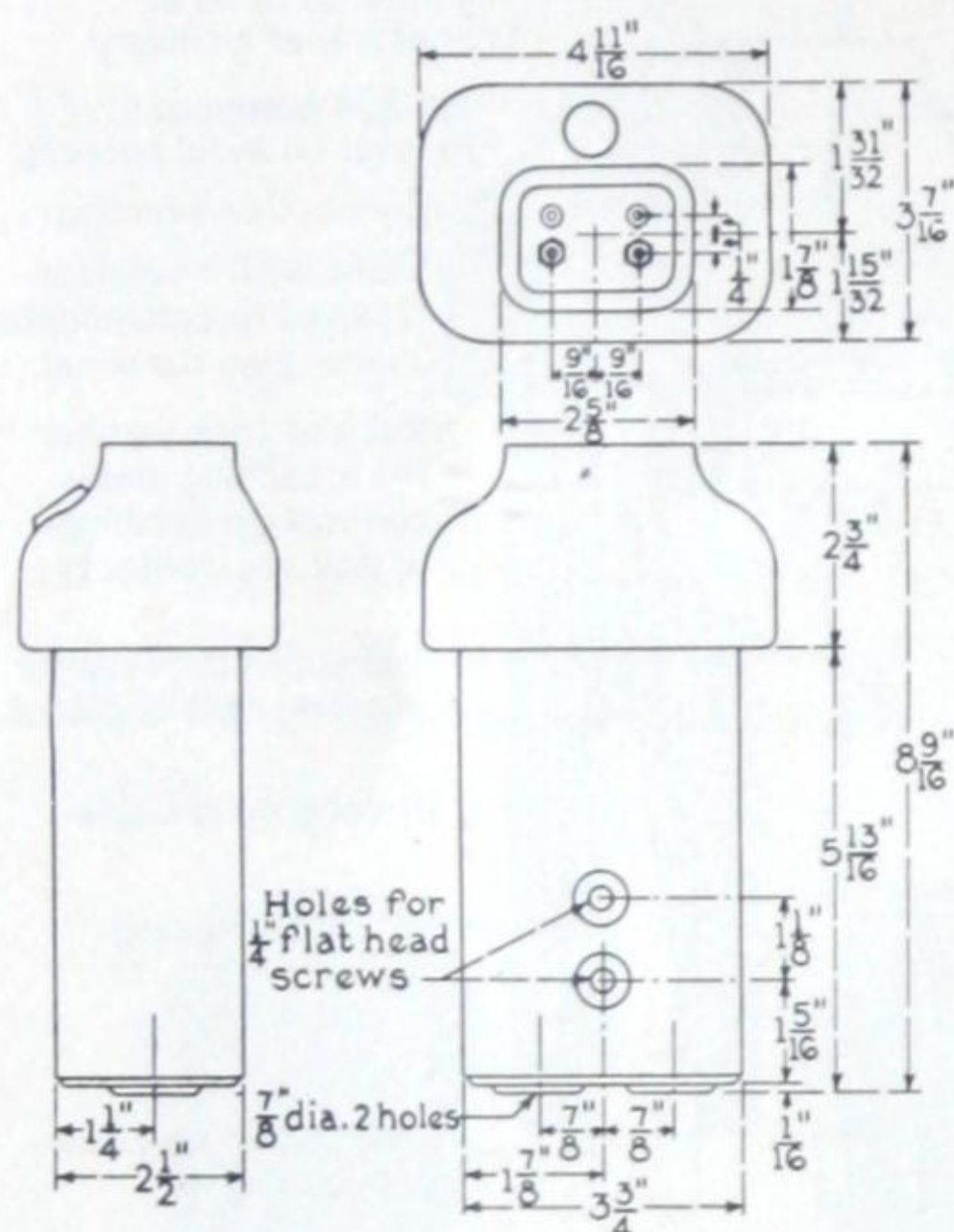
*COMPOUND FOR FORM F-100-B CUTOUT

G-E No. 224 compound is recommended for use with the Form F-100-B cutout and is available in the following standard-size containers.

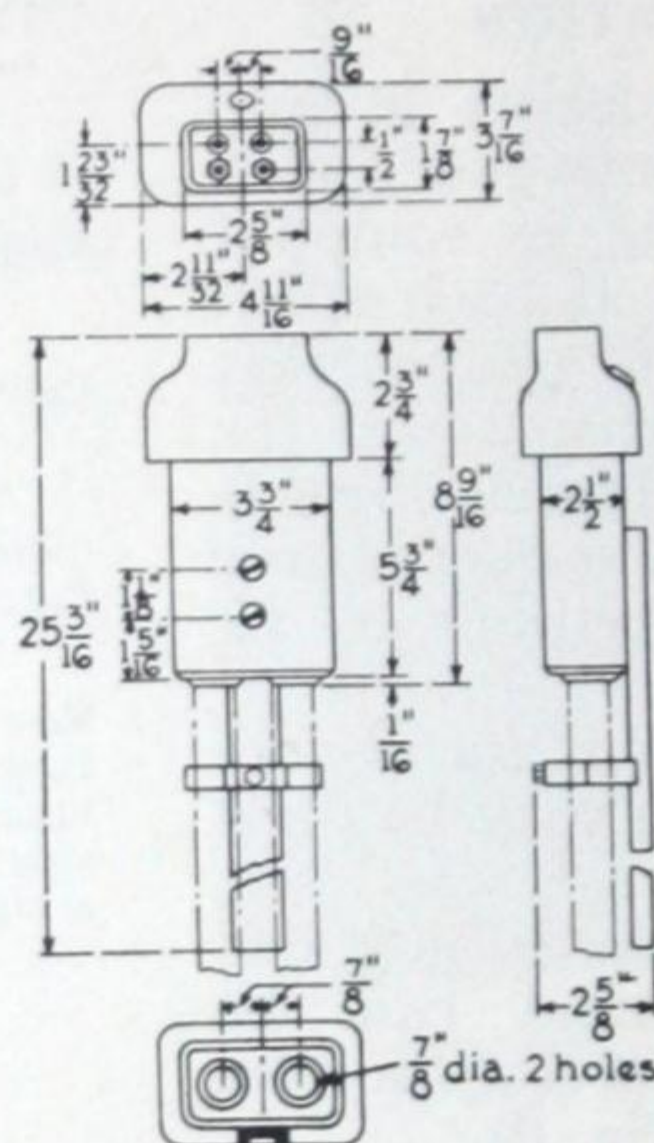
Quantity of Compound Required for Each Cutout	Number of Cutouts Ordered	† Quantity of Compound to be Extracted for Number of Cutouts Ordered	LB per Gal of Compound	Flow Point of Compound
21 oz.	1	1-qt tin container.....	7	110 C
	2	2-qt tin container.....		
	3	3-qt tin container.....		
	4	1-gal tin container.....		
	5	1-gal tin container.....		
	10	2-gal tin container.....		
	25	5-gal tin container.....		
	100	20-gal barrel.....		
	130	25-gal barrel.....		

* Inquiries for No. 224 compound only, should be referred to the G.E. Supply Corp.
† No charge is made for containers; therefore, they are not returnable for credit.

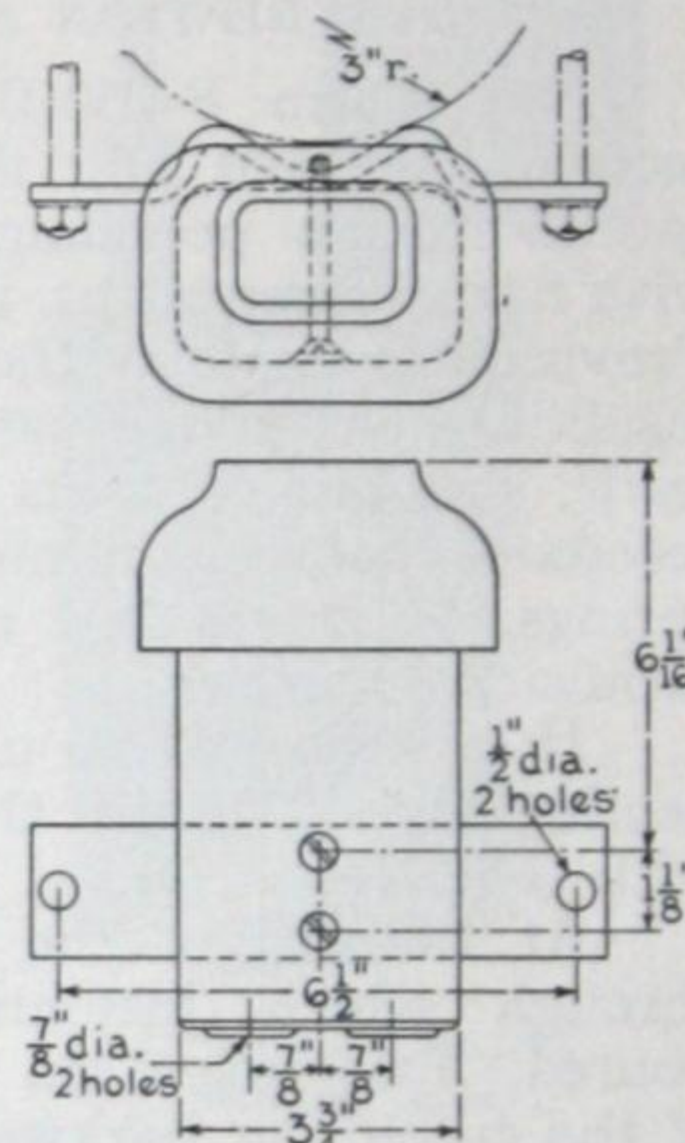
DIMENSIONS



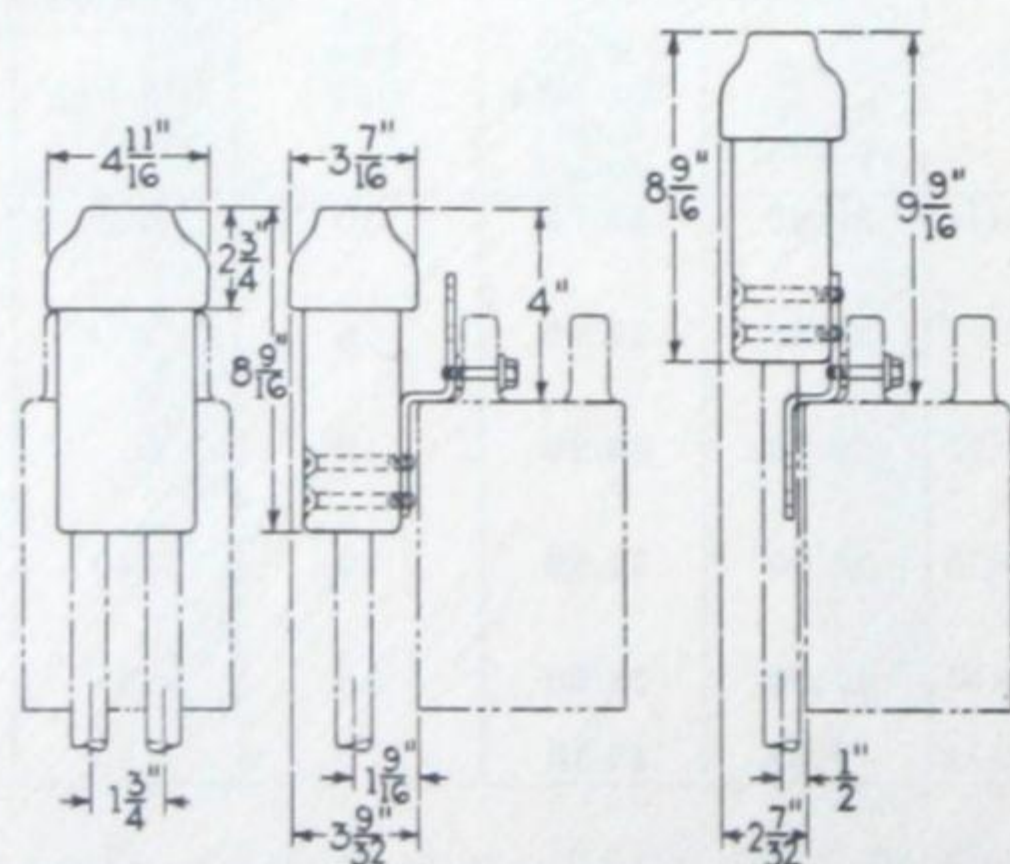
(Drawing K-4802504)
Fig. 7
Cutout only
Cat. No. 3732073G1



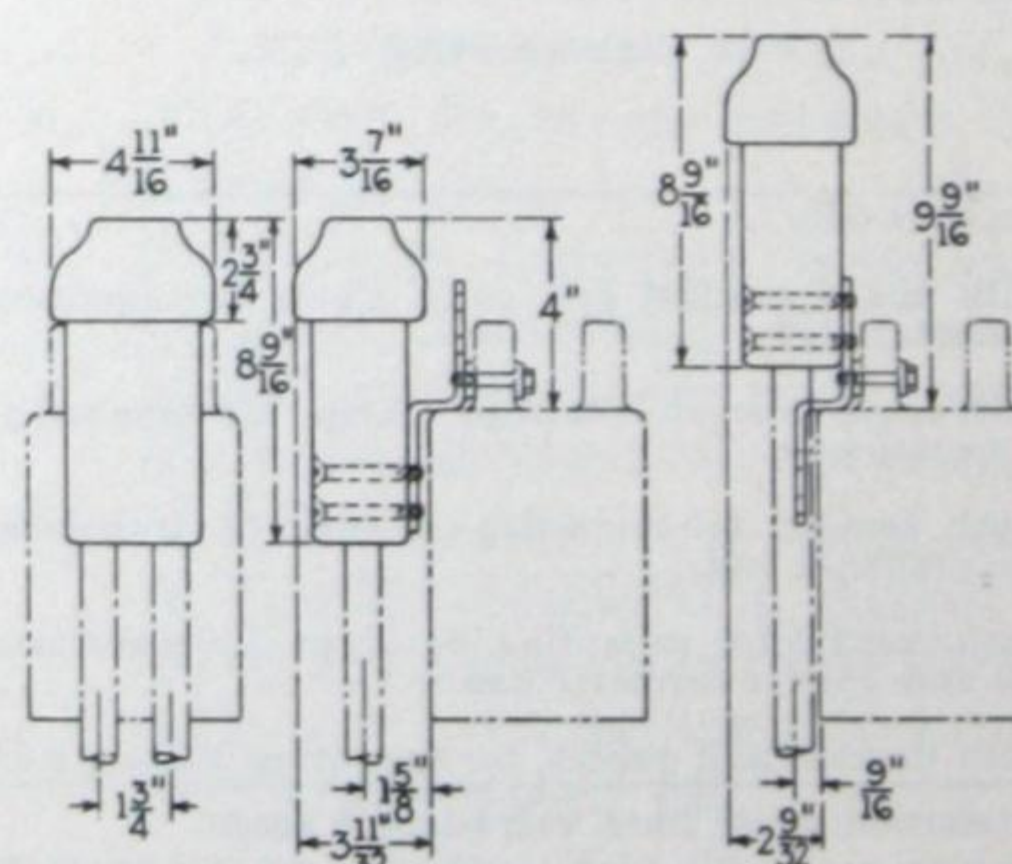
(Drawing K-4802505)
Fig. 8
Cutout with spade bracket
Cat. No. 3732073G2 or
Cat. No. 3732073G7



(Drawing K-4802571)
Fig. 9
Cutout with bracket and gasket for mounting on ornamental pole,
Cat. No. 3732073G4



(Drawing K-4802803)
Fig. 10
Cutout with strap for mounting on IL transformer with 5 3/32-in. diam can,
Cat. No. 3732073G5



(Drawing K-4802804)
Fig. 11
Cutout with strap for mounting on IL transformer with 5 3/32-in. diam can,
Cat. No. 3732073G6

G-E NOVALUX CUTOUTS

For Ornamental Street-lighting Units

TYPE S-1 PLUG-TYPE SERIES ABSOLUTE CUTOUT

APPLICATION

The Form S-1 cutout is used to disconnect individual lamps on series circuits, without breaking the main circuit. They are designed for use in the base of ornamental poles on which are mounted series-operated lamps. They may, however, be installed in other convenient places.

ADVANTAGES

The Form S-1 plug-type cutout has the following advantages:

1. The binding posts, contacts, and phosphor-bronze contact reinforcing springs are held rigidly in place, being supported by L-bolts inserted in lead poured into rectangular recess slots, molded in the porcelain.

2. Reinforcing springs form the initial contacts, thus preventing danger of full voltage across the plug contact.

3. All metal parts are made of noncorrodible metal.

4. It can be used with either incandescent fixtures or arc lamps.

5. Is capable of satisfactorily opening a series circuit with the following 10,000-lumen, 6.6-amp lamps on the secondary side of the cutout:

18 to 20 on a-c circuit.

10 to 12 on d-c rectified circuit

or

3-6.6-amp d-c luminous-arc lamps.

6. Is suitable for operation on either direct- or alternating-current circuits.

7. Suitable for operation on 20-ampere straight series circuits.

8. These cutouts can be mounted in any position without fear of the plug falling out.

9. Porcelain insulators are installed between contacts instead of the usual compound.

10. Has unusually high dielectric strength:

(A) 40,000-volt flashover from conductor to ground.

(B) 32,000-volt flashover from lamp to line.

(C) 30,000-volt flashover from conductor to groove in handle plug.

(D) 5000-volt flashover from contact to contact on the plug across the porcelain spacers, with plug inserted.

All of the above represent factory tests under normal dry conditions.

DESCRIPTION AND OPERATION

The Form S-1 plug-type series absolute cutout is of the manually operated type, and when the plug is removed all connections between the line and lamp are absolutely open. It consists of two porcelain sections, a plug and box made of special-process porcelain of high dielectric strength, and metal parts of noncorrodible material.

The plug carries the plug contacts, which are attached by screws directly to a shoulder (which is an integral part of the plug) and are separated at their opposite ends by fixed porcelain spacers, which prevent dislodgement from original position.



Fig. 9

(Photograph 281420)

Form S-1 absolute plug cutout

Four rubber plugs are fastened to the porcelain box to absorb the shock or jar when the plug and box come together. Porcelain insulators are installed between plug contacts, a feature which has been found superior to the compound generally used.

The box contains the binding post for the lamp and line leads, short-circuiting contacts, and contact-reinforcing springs. The binding posts, for connecting the lamp leads, are assembled in the top recess at the end of the box. There is an opening for the lamp leads on each side of the box. When the lamp leads are brought in, a water loop should be formed to prevent moisture entering the cutout. The binding posts for line-lead connections are in a similar recess at the opposite end of box, where two holes are located for the entrance of line leads.

The L-shaped bolts are located at each end of the box. These are embedded in lead, poured into rectangular recessed slots molded in the porcelain. The bolts each support a binding post, contact, and phosphor-bronze contact-reinforcing spring, which prevent the contacts from taking a permanent set. The reinforcing spring holds the contact

G-E NOVALUX CUTOUTS

For Ornamental Street-lighting Units

TYPE S-1 PLUG-TYPE SERIES ABSOLUTE CUTOUT

springs together, thereby preventing opening of the line when the plug is inserted. These springs also engage plug contacts when first inserted, thus preventing the danger of full voltage across the plug contacts. In addition, they also hold the plug contacts securely in the cutout, which permits

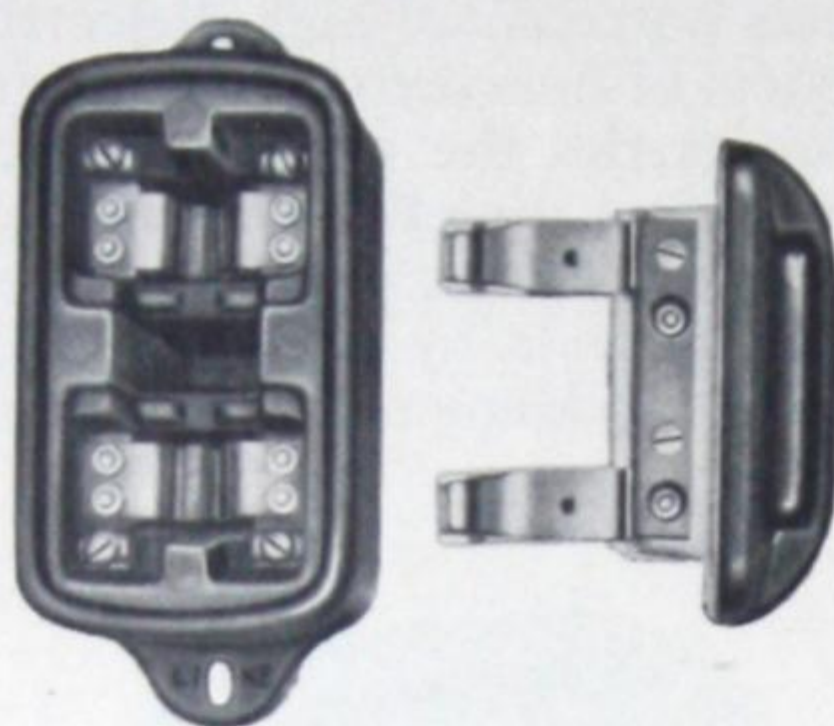


Fig. 10 (Photograph 718352)
Form S-1 absolute plug cutout (interior view)

Fig. 11
Plug for Form S-1 absolute cutout

mounting the cutout in a reverse position, if desired, without fear of the plug falling out.

There is a solid section of porcelain $2\frac{3}{8}$ in. thick between U bolts and base of box; also of porcelain $\frac{3}{4}$ in. thick, and $\frac{1}{4}$ -in. air gap between end of plug contacts and base of box.

The surface leakage distances are as follows:

- From line-lead holes in end of box to supporting screw.....2 in.
- From lamp-lead holes to base of cutout.....3 in.
- From plug contact to finger groove in plug handle..... $2\frac{3}{8}$ in.

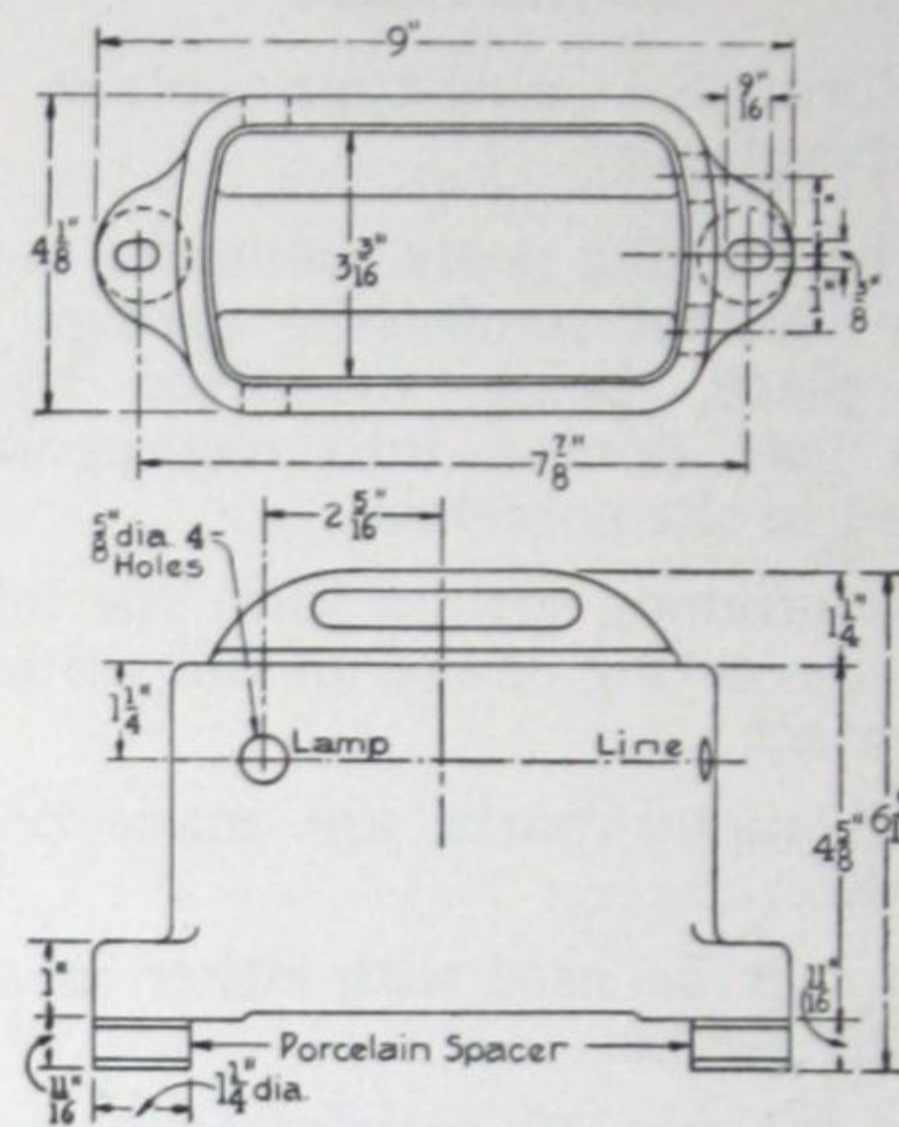


Fig. 12
Dimensions Form S-1 absolute plug cutout

FORM	DESCRIPTION	FIG. NO.	CAT. NO.	LIST PRICE Class GO-51	STD PKG QTY	APPROX WT IN LB	
						Std Pkg. Ship.	Each Net
S-1	Plug type.....	9, 10, 11	3740654G4	\$14.00	8	135	9

NOVALUX CONSTANT-CURRENT TRANSFORMERS

BASIS FOR RATING STANDARD TRANSFORMERS

Rated in kw capacity at unity power-factor.

Also rated in lamp capacity.

Sufficient excess capacity to allow for slight voltage, frequency, and power-factor variations.

Table of lamp capacities includes allowance for normal line losses. For long circuits, apply General Office for lamp capacities.

To determine size of transformer to use or capacity of given transformer, use lamp capacity table and not kw rating.

All G-E Novalux constant-current transformers maintain constant current within one per cent plus or minus from full load to no load at rated primary voltage and frequency and with unity secondary-load power-factor.

PRIMARY VOLTAGE

On the 2300-volt connection, the transformers will operate satisfactorily on primary voltages between 2200 and 2400.

On the 2000-volt connection, the transformers will operate satisfactorily on primary voltages between 1900 and 2100.

With primary voltage below these limits, the kw output is reduced.

With primary voltage above these limits, the regulation is affected, especially when the transformer is not fully loaded.

PRIMARY FREQUENCY

The transformers will operate satisfactorily with slight frequency variations as experienced on average supply circuits.

With large frequency variations, the output and regulation of the transformers will be affected.

PRIMARY POWER-FACTOR

The primary power-factor drops off rapidly on partial loads and with loads of less than unity power-factor.

LOAD POWER-FACTOR

The transformers are designed and rated for a noninductive lamp load.

Secondary circuits, including autotransformers and Type IL transformers, reduce the kw output of the constant-current transformers because of the lower power-factor. The lamp-capacity tables show the lamp capacities for various types of secondary circuits.

For conditions other than those included in the lamp capacity tables, refer General Office.

TRANSFORMER CAPACITY

For mixed types of loads the size of the transformer for each load should be selected. The sum of these sizes determines the rating of the transformer.

EXAMPLE:

Loads		Individual Load Transformer Rating
18—	2500-lumen straight series lamps.....	3 kw
72—	1000-lumen straight series lamps.....	5 kw
7—	4000-lumen autotransformer lamps.....	2 kw
13—	6000-lumen autotransformer lamps.....	5 kw
7—	10000-lumen Type IL transformer lamps.....	5 kw

Total capacity Type RO transformer.... 20 kw

Allowance is made in the tables for normal line losses.

NOVALUX CONSTANT-CURRENT TRANSFORMERS

Types RV-2, RF, RO, and ROC

TYPES AVAILABLE

RV-2: Nonautomatic starting, station type.

RF: Fully automatic (including starting), station type.

RO: Fully automatic either pole-mounting or subway type.

ROC: Fully automatic with self-contained capacitance to correct power-factor, either pole-mounting or subway type.

OPERATING CHARACTERISTICS

TYPE RV-2

For indoor use in central stations or substations with operator in attendance; are air cooled, no oil.

Coils must be manually latched apart before energizing and unlatched after energizing if not unlatched automatically.

Standard sizes 5 to 70 kw, 60 cycles, 2300 volts primary, 6.6 amp secondary.

Special transformers available in any size for any commercial secondary current or frequency, or for any primary potential up to 13,200 volts.

Correctly adjusted at factory.

Adjustments readily made in field by altering position of rocker arm or by changing weights which counterbalance coils.

A light-load tap in primary permits operating at 80 per cent of maximum load with full-load operating characteristics.

Forty-kw transformers and larger built with multicircuit secondary and can be operated either single circuit or multicircuit.

TYPE RF

For indoor use in unattended central stations or substations.

Air-cooled, no oil.

Standard sizes 5 to 70 kw, 60 cycles, 2300 volts primary, 6.6 amp secondary.

Special transformers available in any size for any commercial secondary current or frequency, or for any primary potential up to 13,200 volts.

Forty-kw transformers and larger built with multicircuit secondary and can be operated either single circuit or multicircuit.

Inherent reactance higher than RV-2, giving better protection to lamps.

No taps, either for voltage or partial-load operation, provided.

TYPE RO

Completely automatic. For mounting either on poles or in a vault or subway where no substation is available.

Standard sizes 1 to 30 kw, 60 cycles, 2300 volts primary, 6.6 amp secondary.

Designed to operate on primary voltages between 2200 and 2400.

A tap is provided on the primary for operation at 2000 volts without reduction of output.

Special transformers available for any commercial secondary current or frequency, or for any primary potential up to 13,200 volts.

High reactance of transformers protects the lamps at starting and checks surges on the line, thereby insuring maximum lamp life.

Lightning arresters recommended on both primary and secondary, provided the primary and secondary circuits are not entirely underground.

TYPE ROC

Has all the characteristics of the Type RO transformer except that the power-factor is corrected to 99 per cent at full load.

Combines a Type RO transformer with suitable capacitors in the same tank.

Particularly adaptable to sections with heavy, low-power-factor industrial loads; adding a high-power-factor street-lighting load will improve the resultant system power-factor.

Also adaptable for outlying sections where the line drop must be kept at the minimum; improving the power-factor for a given load decreases the current and line drop.

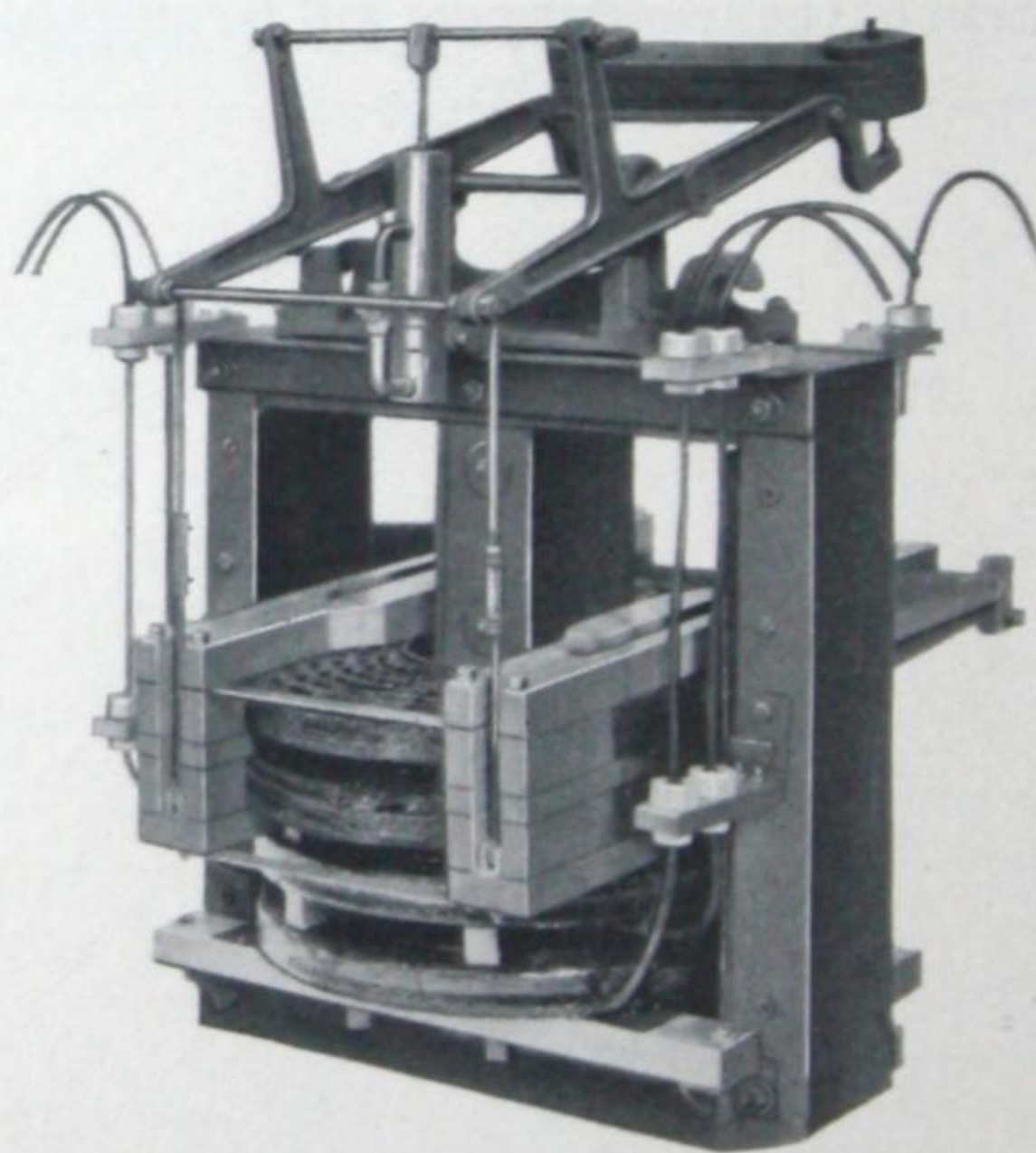


Fig. 1

(Photograph 721322)

Automatic station-type RF without cage

NOVALUX CONSTANT-CURRENT TRANSFORMERS

Types RV-2, RF, RO, and ROC

CONTROL

TYPE RV-2

For control equipment, refer to page 239 to 244 incl.

Station-type circuit breaker and panel required.

Station attendant must latch coils apart before energizing and if they are not unlatched automatically must unlatch after energizing.

TYPE RF

For control equipment refer to page 239 to 244 incl and page 245 to 252 incl.

Station-type circuit breaker and panel or remotely controlled Novalux controller may be used.

TYPES RO AND ROC

Operated with Novalux controller, remotely controlled, refer to page 245 to 252 incl.

CONSTRUCTION

TYPE RV-2

Ball-bearing rocker arms.

Flexible steel supporting cable and flexible leads to moving coil insure smooth operation and permanent adjustment.

Air-cooled.

Windings subdivided with vertical ventilating ducts.

Coils and core surrounded by a new-type, low-loss, protective, band-iron casing to prevent accidental contact with transformer.

Casing removable for cleaning purposes.

Movement of coil damped by dashpot.

Core laminations held together by bolts and tubular brass rivets to reduce vibration and insure quiet operation.

Coils securely clamped and wedged in position.

Rocker arms substantial and braced to withstand mechanical shocks during line surges.

Angle-iron frame.

Core of nonaging silicon steel of high permeability, insuring low core loss and high efficiency.

TYPE RF

One side of secondary coil mounted on a ball-bearing hinge; the opposite side is linked to a counterbalanced lever.

Floating coil movement damped by oil-filled dashpot.

Air-cooled.

Windings have vertical ventilating ducts.

Coils and core surrounded by a new-type, low-loss, protective, band-iron casing to prevent accidental contact with transformer.

Casing removable for cleaning purposes.

Balancing mechanism supported on ball bearings.

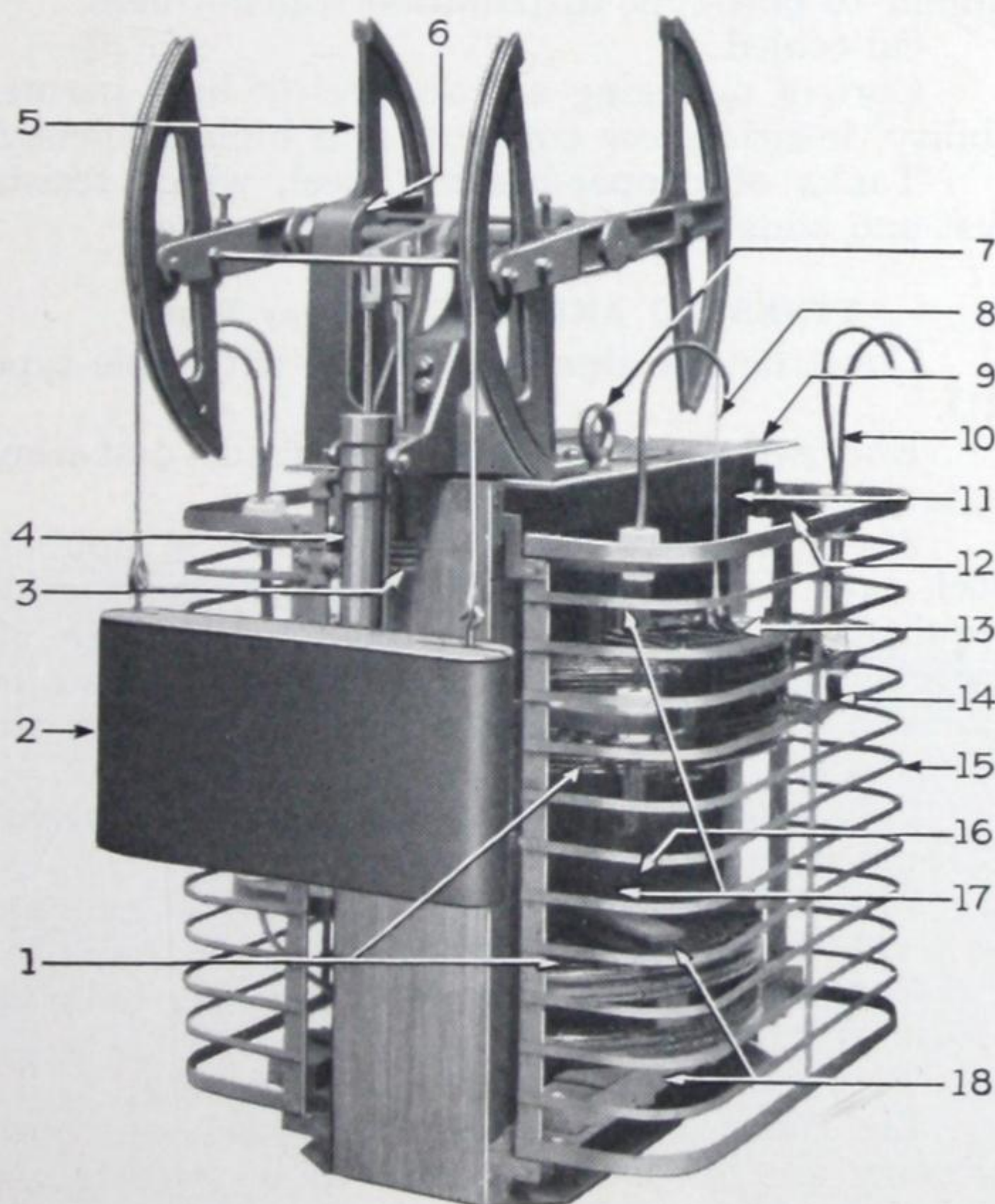


Fig. 2

(Photograph 721839)

Nonautomatic station-type RV-2 constant-current transformer

1. Subdivided windings—light weight—low internal voltages—maximum ventilation.
2. Balancing weight—box type containing loose weights—allows easy adjustment of current.
3. Spring buffer—prevents moving coil from striking stationary coil.
4. Dashpot—of ample size to prevent swinging.
5. Strong balancing levers—for supporting coils and counterweights.
6. Ball bearings minimize friction.
7. Heavy eyebolts for lifting.
8. High-grade flexible-steel supporting cable.
9. Angle-iron frame—reduces weight, adds strength.
10. Primary connections, with extra tap for light-load operation.
11. Compound barrier—insulates coils from outer core legs.
12. Lead and bushing supports—mounted on core.
13. Strong moving-coil clamps—securely bolted through ducts—prevent unbalance of coils.
14. Special extra-flexible leads to moving coil—insure smooth operation.
15. Special low-loss band-iron casings—permit inspection and prevent accidental contact with live parts—easily removed without disturbing leads.
16. Laminated silicon-steel core—cruciform-shaped middle leg.
17. Herkolite winding cylinder—insulates coils from middle leg.
18. Heavy stationary coil support and clamp.

NOVALUX CONSTANT-CURRENT TRANSFORMERS

Types RV-2, RF, RO, and ROC

Core of nonaging silicon steel of high permeability, insuring low core loss and high efficiency.

1. Subdivided windings—light weight—low internal voltages—maximum ventilation.
2. Accessible balancing weights allow easy adjustment of current.
3. Spring buffer—prevents moving coil striking stationary coil.
4. Dashpot—of ample size to prevent swinging.
5. Balancing lever for supporting coils and balancing weight.
6. Ball bearings minimize friction.
7. Cast hooks for lifting transformer.
8. Steel links for supporting coils.
9. Point of support for moving coil locked and clamped.
10. Compound barrier—insulates coils from outer core legs.
11. Lead and bushing supports mounted on core.
12. Strong moving-coil clamps prevent shifting of coils.
13. Special low-loss band-iron casings—permit inspection and prevent accidental contact with live parts—easily removed without disturbing leads.
14. Laminated silicon-steel core—cruciform-shaped middle leg—riveted construction.
15. Herkolite winding cylinder—insulates coils from middle leg.
16. Heavy stationary coil support and clamp.
17. Angle-iron clamps combine strength and rigidity with light weight.

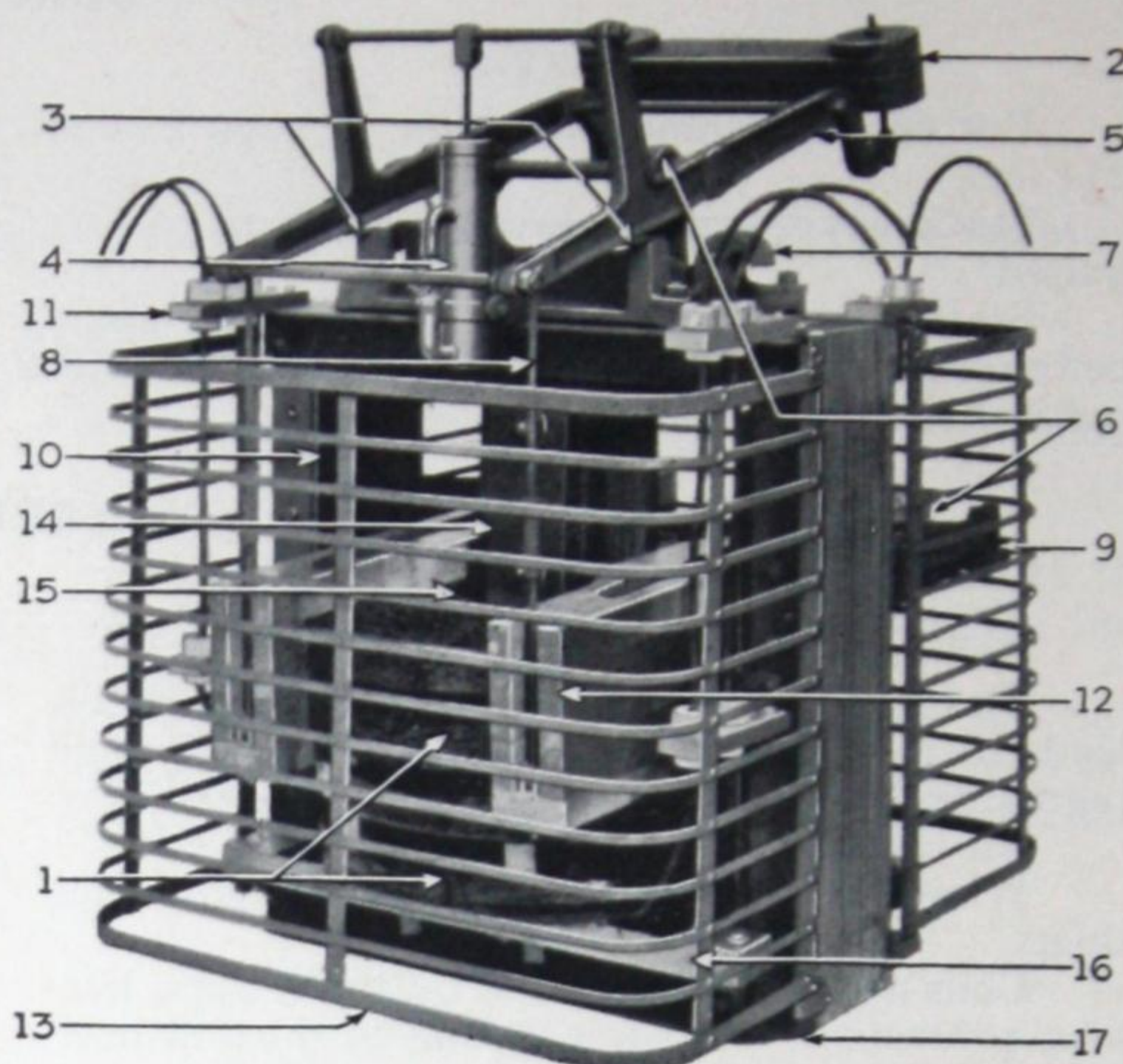


Fig. 3

(Photograph 721321)

Automatic station-type RF transformers with band-iron casing

TYPES RO AND ROC (Pole Type)

One side of secondary coil mounted on a ball-bearing hinge; the opposite side is linked to a counterbalanced lever.



Fig. 4

(Photograph 277001)
Type RO transformer
with tank

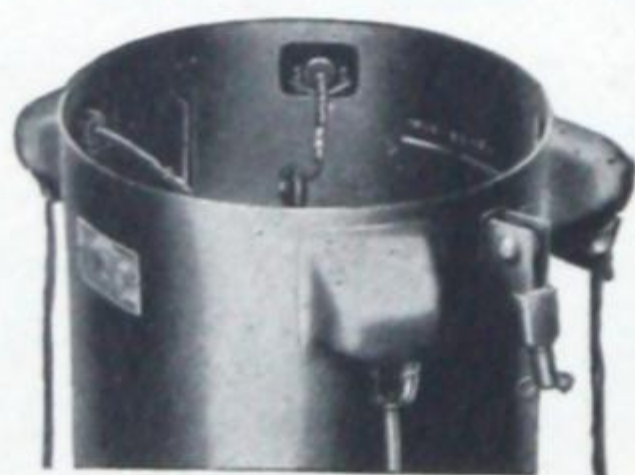


Fig. 5

(Photograph 277003)
Type RO transformer
(Cover Removed)

All moving parts light but strong to insure quick response to fluctuations in load.

Core and coils supported as a removable unit on angle-iron brackets welded to the inside of the tank.

Lightweight, pressed-steel cover readily removed for inspection and adjustment.

Primary and secondary leads enter tank through porcelain bushings of the mechanical type similar to pole-type distribution transformers.

Oil-cooled.

Core of nonaging silicon steel of high permeability, insuring low core loss and high efficiency.

Tanks of copper-bearing steel, which resists rust and adds to the life of the transformer.

TYPES RO AND ROC (Subway Type)

Construction almost identical with pole-type RO.

Enclosed in a specially designed, cast-iron, waterproof tank.

25- and 30-kw sizes available in a double-deck type for use when a narrow transformer is required for installation through a manhole 32 inches in diameter. If the manhole is 35 inches in diameter or larger, the single-deck transformers can be installed.

Four primary and secondary leads brought out at separate terminals.

Oil-level-indicating plugs provided to indicate oil level without removing tank cover.

Tanks should be filled with the top oil plug open until the oil runs out.

To test for oil level, open bottom plug.

Lightning arresters recommended on both primary and secondary unless these circuits are entirely underground. If the primary circuit extends into the subway from overhead, pole-type cutouts can be used. If the primary circuit is entirely underground, the D&W subway fuse cutouts must be used.

NOVALUX CONSTANT-CURRENT TRANSFORMERS

Types RV-2, RF, RO, and ROC

1. Primary leads.
2. Tap for lower primary voltage.
3. Secondary leads.
4. Balancing lever.
5. Lifting hooks.
6. Spring buffer.
7. Steel link with adjustable turnbuckle.
8. Angle-iron core clamps.
9. Core.
10. Insulation barrier.
11. Moving-coil clamps.
12. Moving coil.
13. Ball-bearing pivots.
14. Insulation cylinder.
15. Stationary coil.
16. Stationary-coil support.
17. Core clamp slotted to fit guide in tank.
18. Point of support of moving coil locked and clamped.
19. Cast brackets bolted through core.
20. Core riveted.
21. Insulating lead conduits.

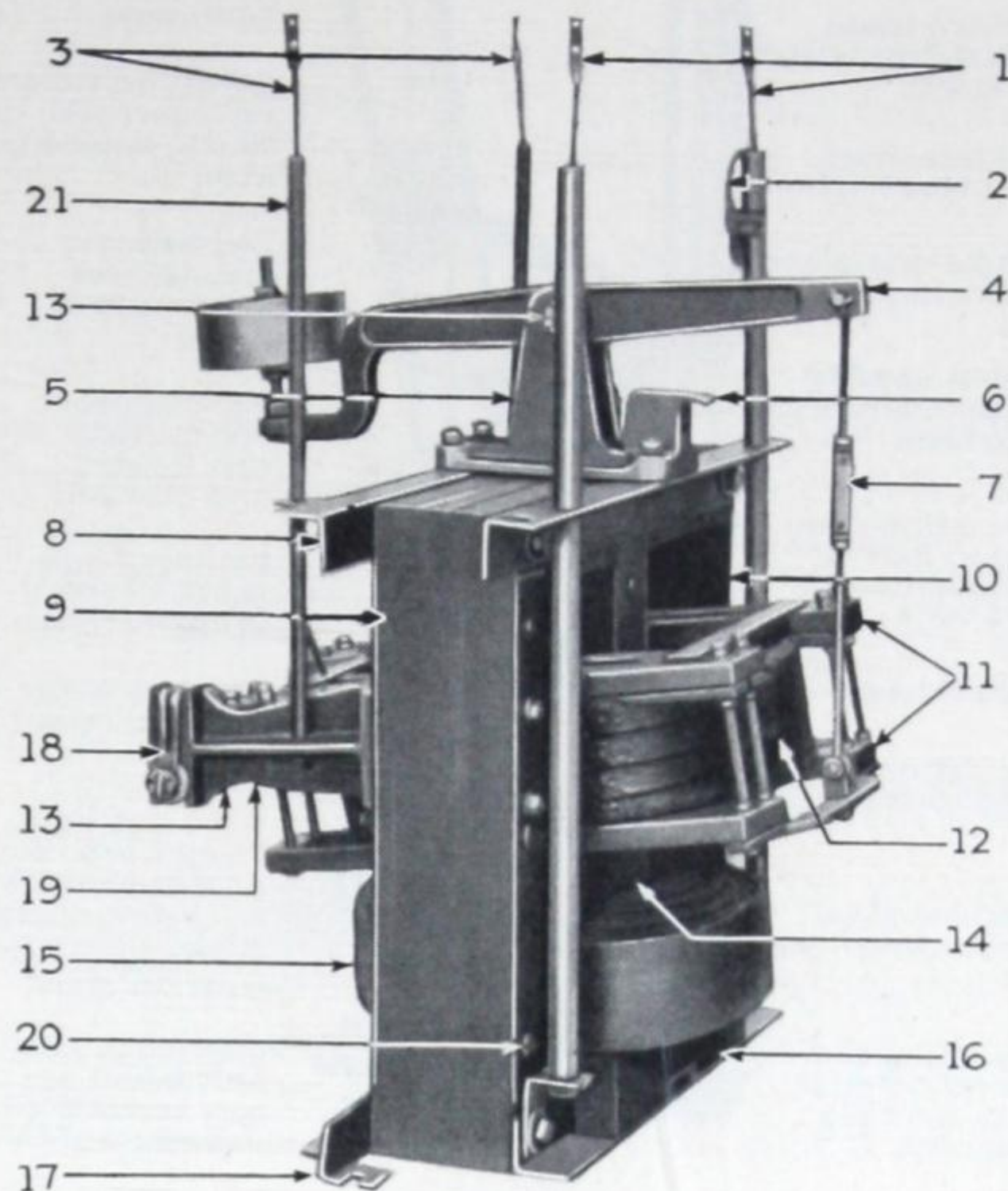


Fig. 6
(Photograph 717994)
Type RO transformer without tank



Fig. 7
(Photograph 279978)
Pole-type ROC transformer

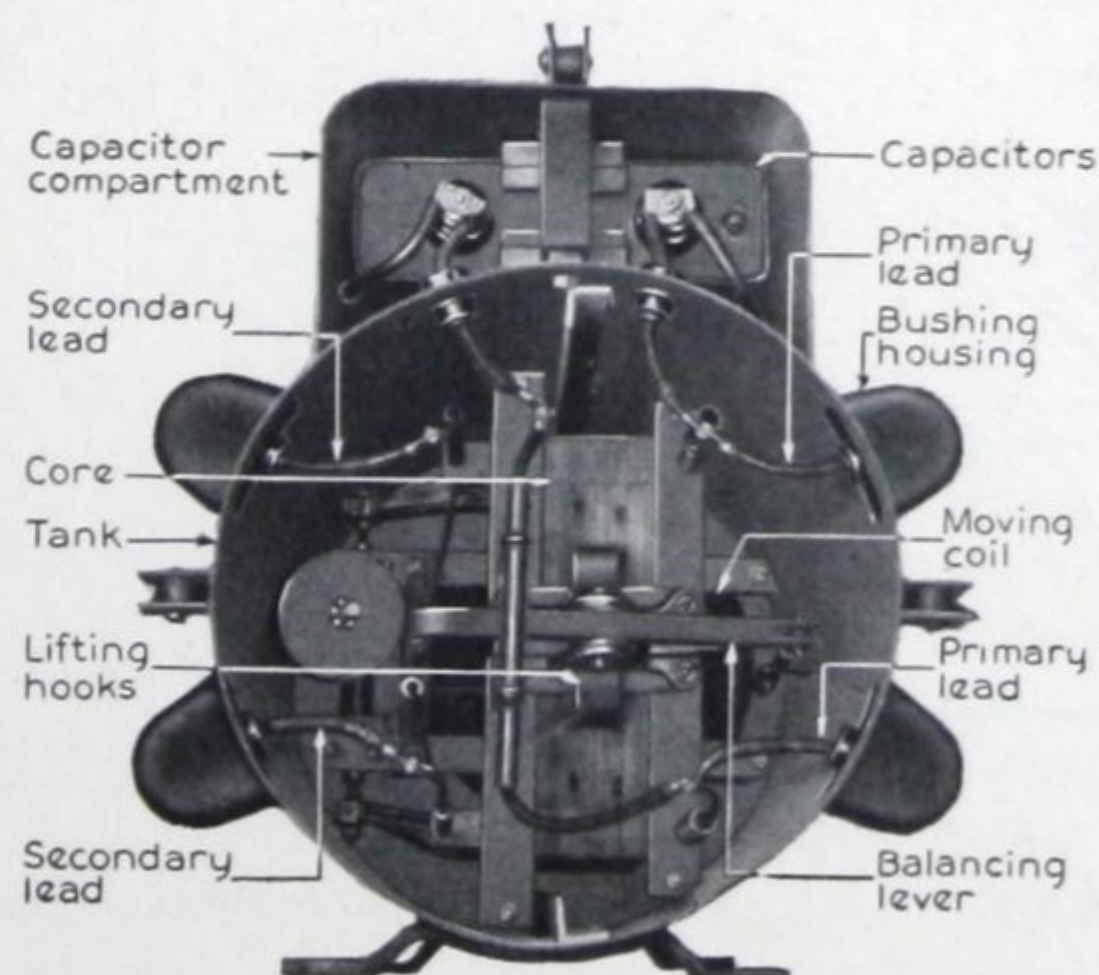


Fig. 8
(Photograph 279980)
Pole-type ROC transformer in tank



Fig. 9
(Photograph 273810)
Subway-type RO Novalux transformer, single-deck type

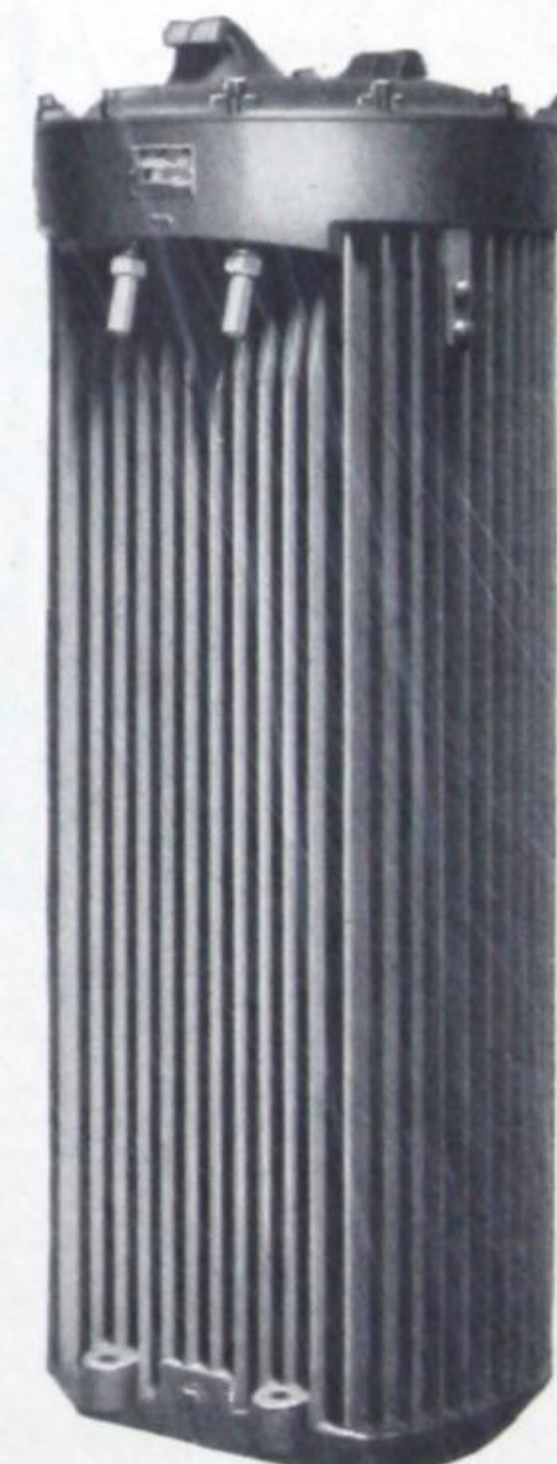


Fig. 10
(Photograph 721126)
Subway-type RO Novalux transformer, double-deck type

NOVALUX CONSTANT-CURRENT TRANSFORMERS

Types RV-2, RF, RO, and ROC

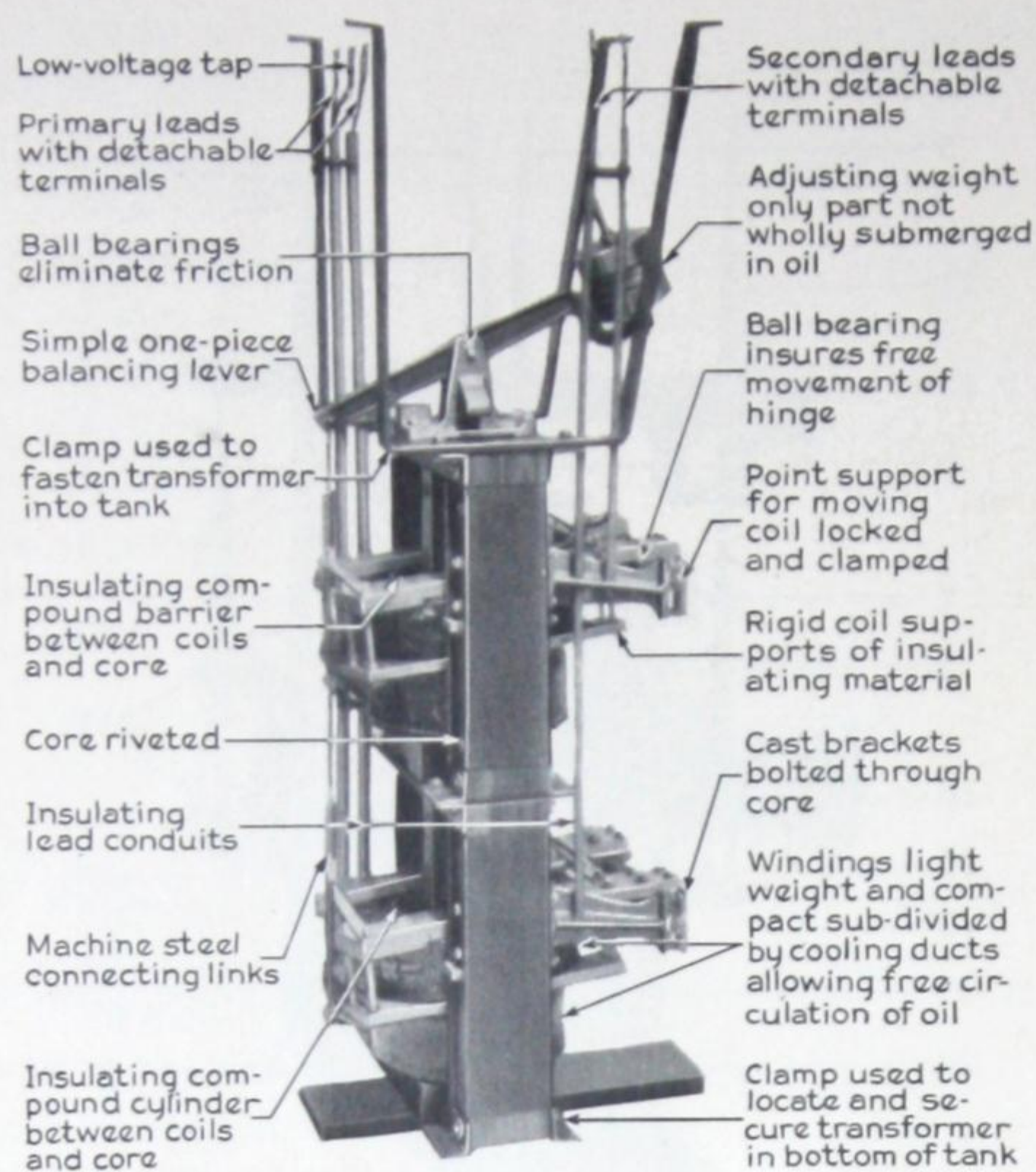


Fig. 11

(Photograph 721127)

Subway-type RO Novalux transformer, double-deck type



Fig. 13

(Photograph 716332)

Subway-type ROC transformer

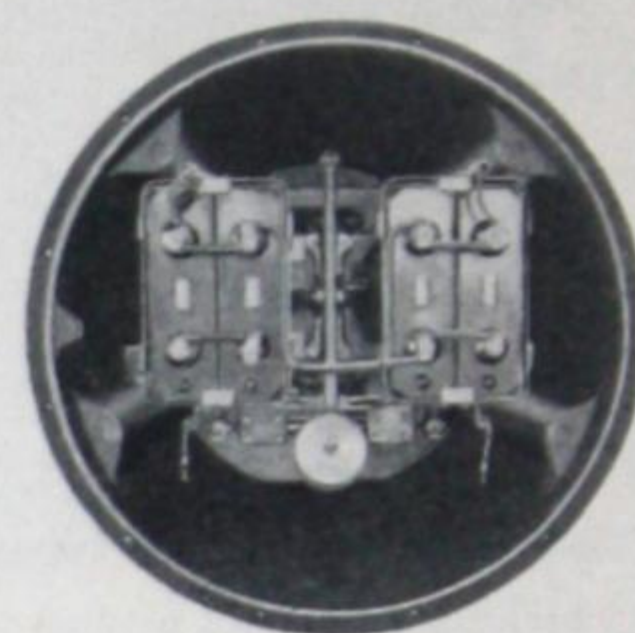


Fig. 14

(Photograph 716334)

Subway-type ROC transformer in tank

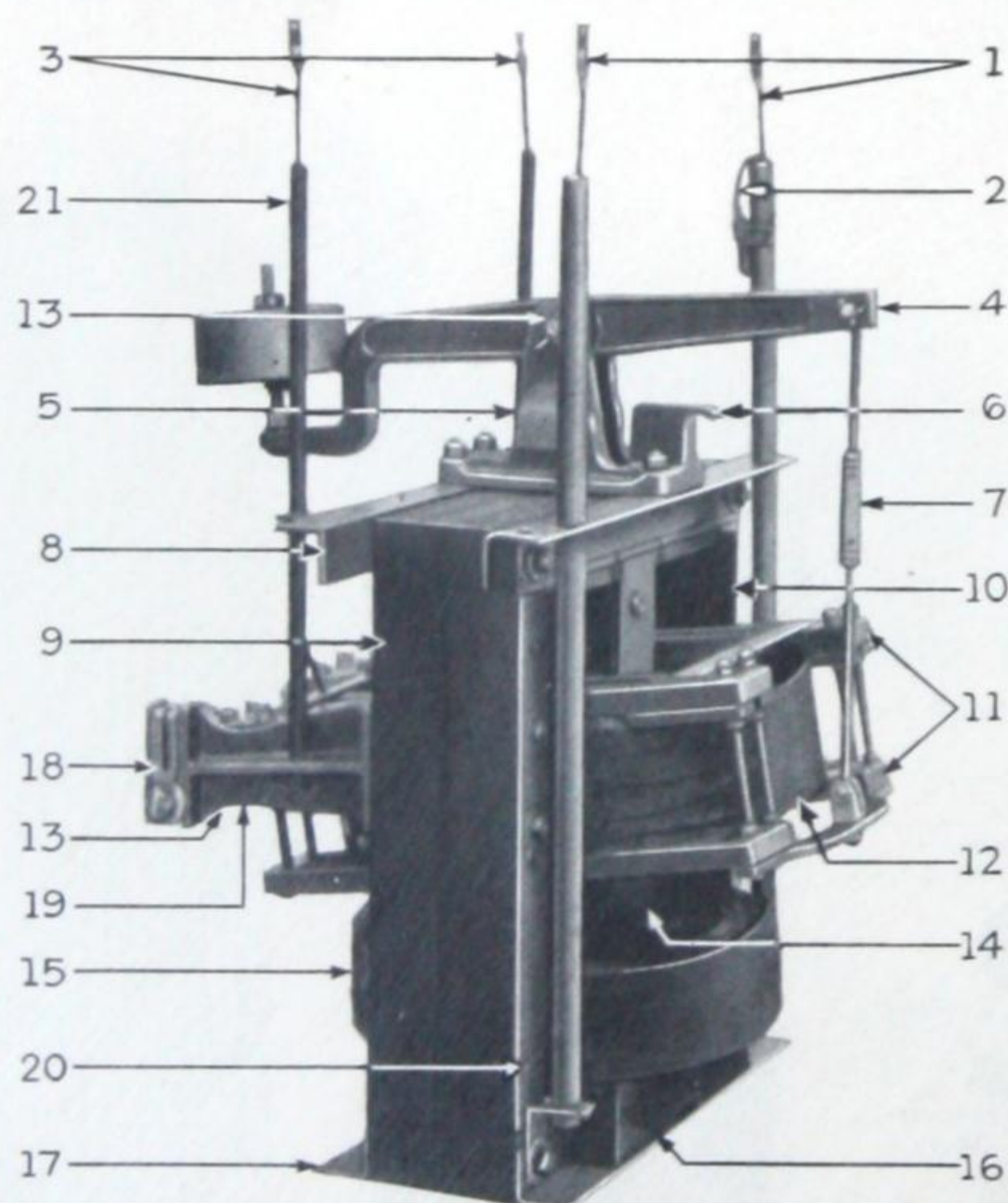


Fig. 12

(Photograph 719994)

Subway-type RO Novalux transformer, single-deck type

1. Primary leads.
2. Tap for lower primary voltage.
3. Secondary leads.
4. Balancing lever.
5. Lifting hooks.
6. Spring buffer.
7. Steel link with adjustable turnbuckle.
8. Angle-iron core clamps.
9. Core.
10. Insulation barrier.
11. Moving-coil clamps.
12. Moving coil.
13. Ball-bearing pivots.
14. Insulation cylinder.
15. Stationary coil.
16. Stationary-coil support.
17. Core clamp used to locate and secure transformer in bottom of tank.
18. Point of support of moving coil locked and clamped.
19. Cast brackets bolted through core.
20. Core riveted.
21. Insulating lead conduits.

NOVALUX CONSTANT-CURRENT TRANSFORMERS

Types RV-2, RF, RO, and ROC

ADVANTAGES

Efficiency approximately the same as pole-type RO transformers and nearly equal to that of station-type RV-2 transformers.

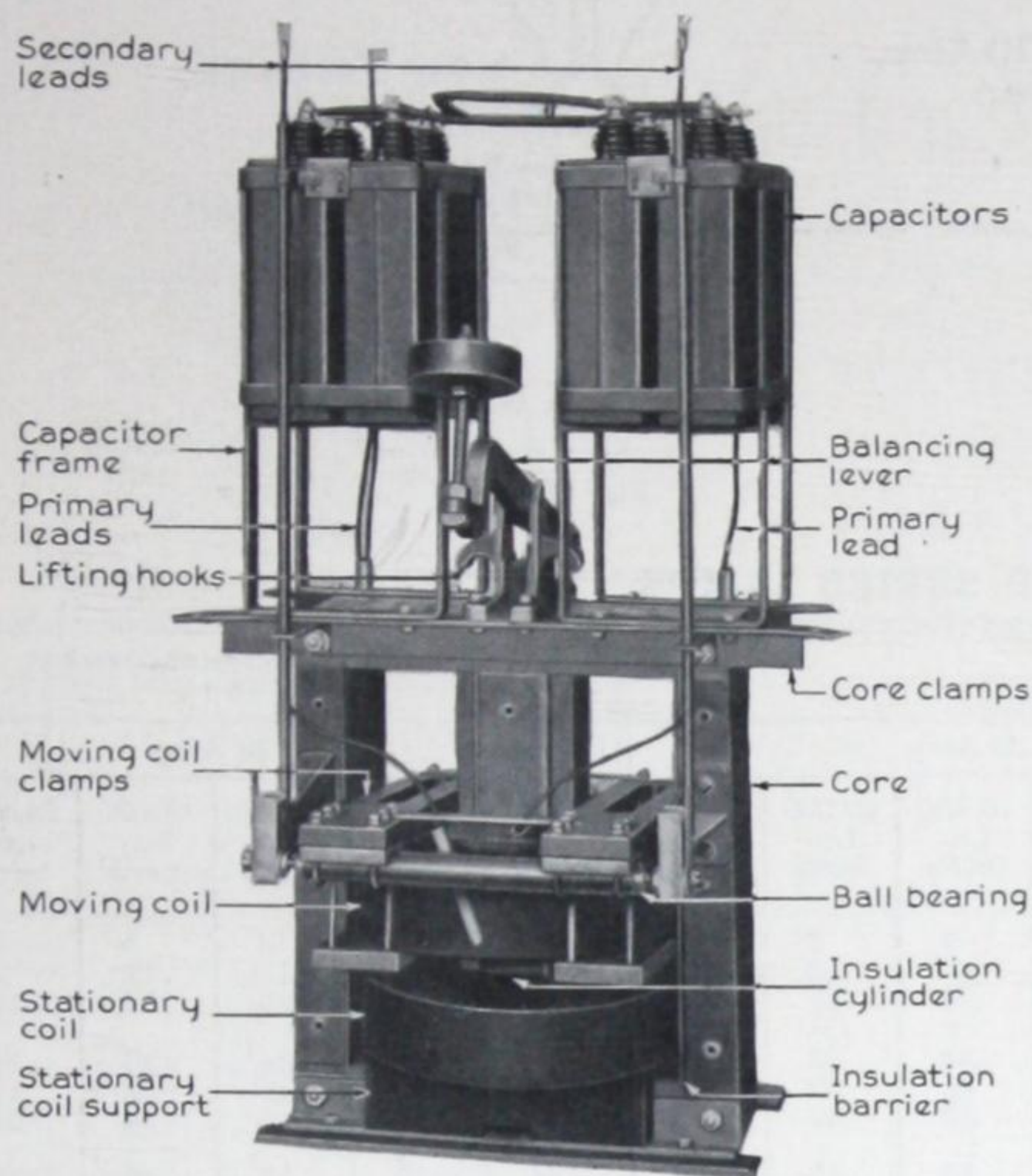


Fig. 15

(Photograph 716333)

Subway-type ROC transformer without tank

TYPE RV-2

Windings have vertical ventilating ducts.

Coils insulated where exposed to core iron.

Transformers equipped with a removable protective band-iron casing.

When operated at rated primary voltage and frequency and unity-power-factor secondary load, will regulate from full load to no load within 1 per cent, plus or minus, of rated secondary current.

Balancing mechanism supported on ball bearings. This, together with high repulsion between coils, provides excellent regulation.

Light-load tap provided on primary for operation at 80 per cent of rated load with full-load characteristics.

Extra capacity above rating is provided for line losses and variation in primary voltage and frequency.

TYPE RF

Air-cooled station-type with automatic starting and fully automatic operation. No station attendant necessary.

When operated at rated primary voltage and frequency and unity-power-factor secondary load, will regulate from full load to no load within 1 per cent, plus or minus, of rated secondary current.

High reactance minimizes lamp failures due to line surges.

Primary power-factor 80 per cent at maximum load, 60 per cent higher than any stationary-coil regulator.

TYPE RO (Pole Type)

Regulation entirely automatic.

When operated at rated primary voltage and frequency and unity-power-factor secondary load, will regulate from full load to no load within 1 per cent, plus or minus, of rated secondary current.

Control panel and attendant unnecessary. However, periodic inspection and check of secondary current and periodic filtering of oil recommended.

High reactance minimizes lamp failures due to line surges.

Mechanism and coils submerged in oil in a weatherproof tank.

Primary power-factor 80 per cent at maximum load, 60 per cent higher than a stationary-coil regulator.

Efficiency nearly equal to that of station-type transformers.

Light-weight pressed-steel cover, instead of heavy cast-iron cover with hand hole.

Transformer mechanism spring-suspended from tank instead of strap-suspended from cover.

Individual bushings with mechanical holders for each lead instead of bushing compounded in.

Leads brought out through four separate bushings.

Lower voltage connection inside of tank instead of outside.

TYPE RO (Subway Type)

Same characteristics and advantages as pole-type RO, except that a waterproof tank suitable for indefinite operation under water is used.

TYPE ROC (Pole and Subway Types)

Ninety-nine per cent primary power-factor at full load.

At partial loads the percentage reduction in primary power-factor is much less than with a standard constant-current transformer.

When operated at rated primary voltage and frequency and unity-power-factor secondary load, will regulate from full load to no load within 1 per cent, plus or minus, of rated secondary current.

Lower open-circuit voltage than obtainable in any other constant-current regulator having unity power-factor. This open-circuit voltage is the same as the standard Type RO transformer.

The weight is less than that of any other transformer of the constant-current type which has a unity power-factor.

NOVALUX CONSTANT-CURRENT TRANSFORMERS

Station Type RV-2

LAMP CAPACITIES (Approximate)

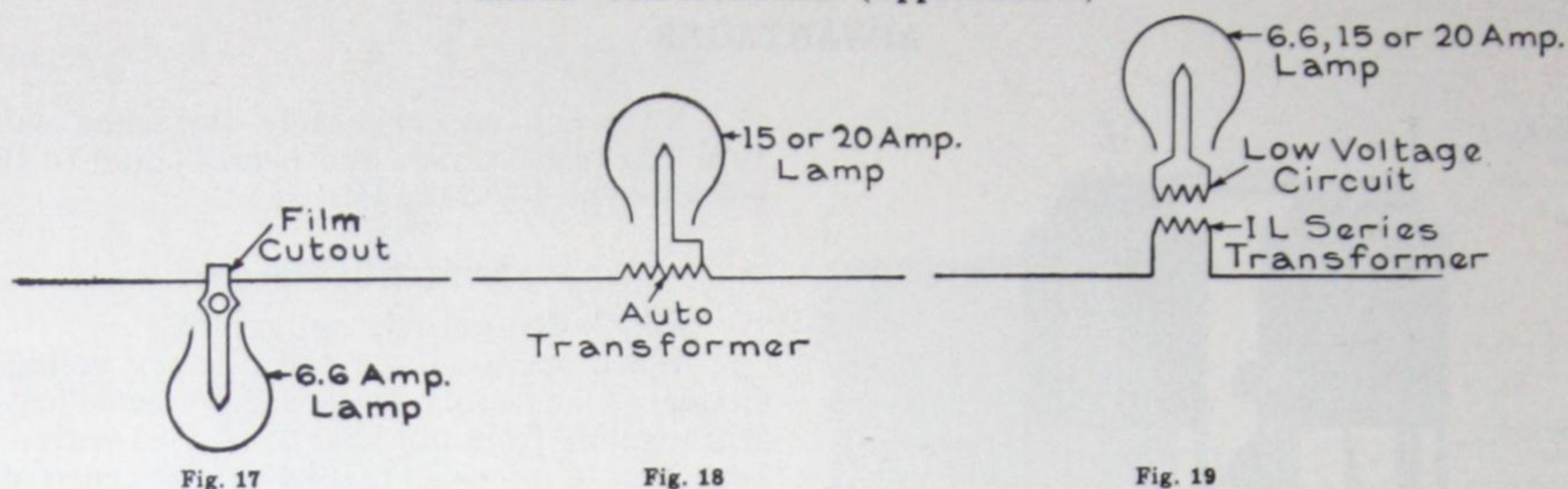


Fig. 17

Fig. 18

Fig. 19

NUMBER OF STANDARD SERIES LAMPS

NOR- MAL KW RAT- ING	STRAIGHT SERIES LAMPS WITH FILM CUTOUT Fig. 17												LAMPS WITH AUTOTRANSFORMERS Fig. 18					
	6.6 Amp						15 Amp	20 Amp						15 Amp	20 Amp			
	600 Lu- mens	800 Lu- mens	1000 Lu- mens	2500 Lu- mens	4000 Lu- mens	6000 Lu- mens	4000 Lu- mens	4000 Lu- mens	6000 Lu- mens	10,000 Lu- mens	15,000 Lu- mens	25,000 Lu- mens	4000 Lu- mens	6000 Lu- mens	10,000 Lu- mens	15,000 Lu- mens	25,000 Lu- mens	
5	110	88	74	31	20	14	21	20	14	9	6	3	19	13	8	5	3	
10	220	176	148	62	41	28	41	39	29	17	12	7	38	27	17	11	7	
15	330	264	222	93	62	42	62	60	42	26	17	11	58	41	25	17	10	
20	440	352	296	124	82	56	82	79	57	35	23	14	77	55	34	23	14	
25	550	440	370	155	103	70	103	99	71	43	29	18	97	69	42	28	18	
30	660	528	444	186	124	84	124	120	85	52	35	22	116	82	50	34	21	
40	880	704	592	248	164	112	165	159	114	70	47	29	154	110	68	46	28	
50	1100	880	740	310	206	140	207	200	142	87	58	36	194	138	84	56	36	
60	1320	1056	888	372	248	168	248	240	171	104	70	44	232	164	100	68	42	
70	1540	1232	1036	434	288	196	290	280	199	122	82	51	270	192	118	80	50	

NUMBER OF STANDARD SERIES LAMPS

NORMAL KW RATING	LAMPS WITH SERIES IL TRANSFORMERS Fig. 19						
	6.6 Amp		15 Amp	20 Amp			
	1000 Lumens	2500 Lumens	4000 Lumens	6000 Lumens	10,000 Lumens	15,000 Lumens	25,000 Lumens
5	55	27	18	13	8	5	3
10	111	54	37	26	16	11	7
15	166	81	55	39	24	16	10
20	222	108	74	53	32	22	14
25	278	135	92	65	40	27	17
30	333	162	110	78	48	32	20
40	445	216	148	106	64	44	28
50	558	270	184	130	80	54	34
60	668	324	220	156	96	64	40
70	779	378	258	184	115	76	48

NUMBER OF GROUP REPLACEMENT SERIES LAMPS

NOR- MAL KW CAPAC- ITY	STRAIGHT SERIES LAMPS WITH FILM CUTOUTS									LAMPS WITH AUTOTRANSFORMERS			LAMPS WITH SERIES IL TRANS					
	6.6 Amp						15 Amp	20 Amp			15 Amp	20 Amp		6.6 Amp		15 Amp	20 Amp	
	600 Lu- mens	800 Lu- mens	1000 Lu- mens	2500 Lu- mens	4000 Lu- mens	6000 Lu- mens	4000 Lu- mens	4000 Lu- mens	6000 Lu- mens	4000 Lu- mens	4000 Lu- mens	6000 Lu- mens	1000 Lu- mens	2500 Lu- mens	4000 Lu- mens	4000 Lu- mens	6000 Lu- mens	
5	99	81	69	28	19	13	20	19	13	18	18	12	51	24	17	17	12	
10	198	162	138	57	39	27	39	38	28	36	36	26	103	49	35	35	25	
15	297	244	207	85	59	41	60	59	40	56	55	39	155	74	53	52	37	
20	396	325	276	114	79	55	79	78	55	74	73	53	207	99	71	70	51	
25	495	417	346	142	99	69	100	98	69	93	92	66	260	124	88	87	62	
30	594	488	415	171	119	82	120	118	82	112	110	79	311	149	106	105	75	
40	792	650	553	228	158	110	160	158	110	148	147	106	416	198	142	141	102	
50	990	813	692	285	198	138	200	197	137	187	185	133	521	248	177	175	125	
60	1188	977	830	342	239	165	240	237	165	224	221	158	625	298	212	210	150	
70	1386	1138	970	399	278	193	281	278	193	260	257	185	728	348	249	246	177	

NOVALUX CONSTANT-CURRENT TRANSFORMERS

Automatic Station, Type RF
LAMP CAPACITIES (Approximate)

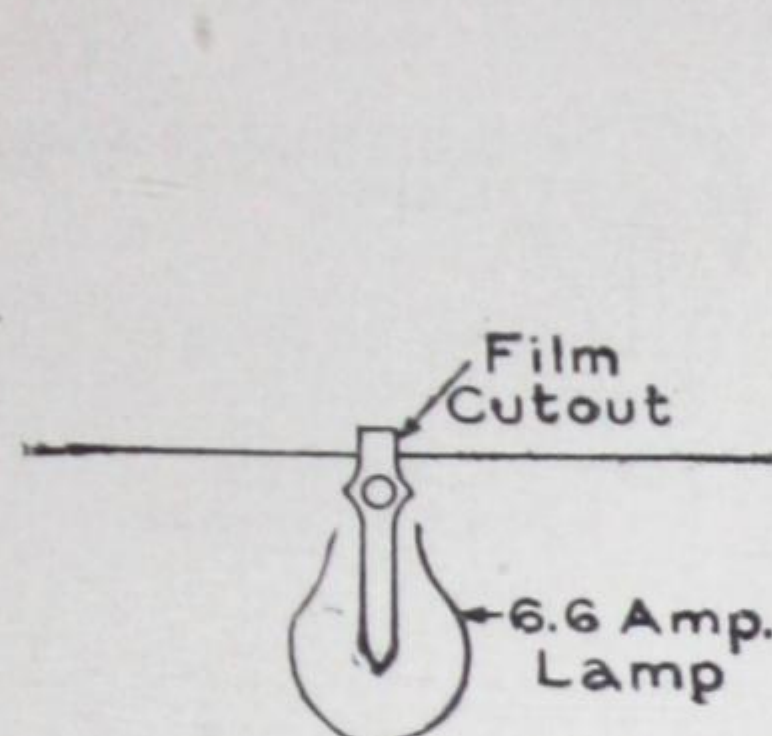


Fig. 20

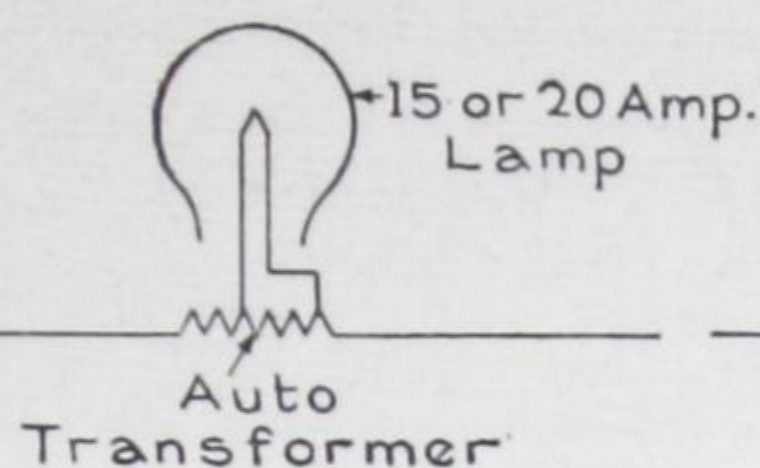


Fig. 21

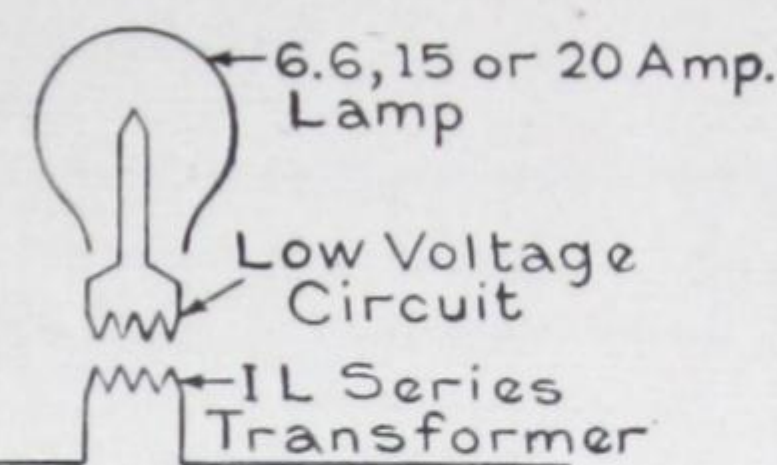


Fig. 22

NUMBER OF STANDARD SERIES LAMPS

NOR- MAL KW RAT- ING	STRAIGHT SERIES LAMPS WITH FILM CUTOUT Fig. 20												LAMPS WITH AUTOTRANSFORMERS Fig. 21					
	6.6 Amp						15 Amp	20 Amp						15 Amp	20 Amp			
	600 Lu- mens	800 Lu- mens	1000 Lu- mens	2500 Lu- mens	4000 Lu- mens	6000 Lu- mens	4000 Lu- mens	4000 Lu- mens	6000 Lu- mens	10,000 Lu- mens	15,000 Lu- mens	25,000 Lu- mens	4000 Lu- mens	6000 Lu- mens	10,000 Lu- mens	15,000 Lu- mens	25,000 Lu- mens	
5	107	86	72	30	20	13	20	19	13	9	6	3	18	12	7	5	3	
10	214	172	144	60	40	26	40	39	28	16	11	7	36	25	16	10	6	
15	321	258	216	90	60	40	60	58	42	25	16	10	55	39	23	16	10	
20	428	344	288	120	80	55	80	78	56	34	22	13	73	52	32	22	13	
25	535	430	360	150	100	66	100	97	70	42	28	17	92	65	40	26	17	
30	642	516	432	180	120	80	121	117	85	50	34	21	110	78	47	32	20	
40	860	688	577	242	160	109	161	156	113	68	45	28	146	104	64	43	26	
50	1075	860	722	302	201	136	202	195	141	85	56	35	183	130	79	53	34	
60	1290	1030	867	362	242	164	242	234	170	102	68	43	220	155	94	64	40	
70	1500	1202	1015	423	281	191	282	273	198	119	80	49	256	181	111	75	47	

NUMBER OF STANDARD SERIES LAMPS

NOR- MAL KW RATING	LAMPS WITH SERIES IL TRANSFORMERS Fig. 22						
	6.6 Amp		15 Amp	20 Amp			
	1000 Lumens	2500 Lumens	4000 Lumens	6000 Lumens	10,000 Lumens	15,000 Lumens	25,000 Lumens
5	53	25	17	12	7	5	3
10	107	51	34	25	15	10	6
15	160	76	52	37	23	15	9
20	215	102	70	50	30	20	13
25	268	127	87	61	38	25	16
30	322	152	104	74	45	30	19
40	430	204	140	100	60	41	26
50	536	254	174	122	75	51	32
60	644	304	208	148	90	60	38
70	752	356	244	174	105	72	45

NUMBER GROUP REPLACEMENT SERIES LAMPS

NOR- MAL KW CAPAC- ITY	STRAIGHT SERIES LAMPS WITH FILM CUTOUTS									LAMPS WITH AUTOTRANSFORMERS			LAMPS WITH SERIES IL TRANSFORMERS				
	6.6 Amp						115 Amp	20 Amp			15 Amp	20 Amp	6.6 Amp		15 Amp	20 Amp	
	600 Lu- mens	800 Lu- mens	1000 Lu- mens	2500 Lu- mens	4000 Lu- mens	6000 Lu- mens	4000 Lu- mens	4000 Lu- mens	6000 Lu- mens	4000 Lu- mens	4000 Lu- mens	6000 Lu- mens	1000 Lu- mens	2500 Lu- mens	4000 Lu- mens	4000 Lu- mens	6000 Lu- mens
5	96	79	67	27	19	12	19	18	12	17	17	11	49	23	16	16	11
10	192	159	134	55	38	25	38	37	27	34	34	24	100	47	32	32	24
15	289	238	202	82	57	39	58	57	39	53	52	37	149	70	50	49	35
20	386	318	269	110	77	54	77	76	53	70	69	50	201	93	67	66	48
25	482	397	336	138	96	65	96	94	67	88	87	62	250	117	84	83	58
30	577	477	403	165	115	78	117	115	80	106	105	75	301	140	100	99	71
40	774	635	540	222	154	107	156	154	107	141	139	100	402	187	135	133	96
50	967	795	675	277	194	134	195	192	134	176	174	125	501	233	168	166	117
60	1160	952	810	333	233	161	234	231	162	212	210	149	602	279	200	198	142
70	1350	1110	950	389	271	188	273	270	188	247	244	174	703	327	235	233	167

NOVALUX CONSTANT-CURRENT TRANSFORMERS

Types RO and ROC (ROC—5 Kw and Larger)

Either Pole or Subway Types

LAMP CAPACITIES (Approximate)

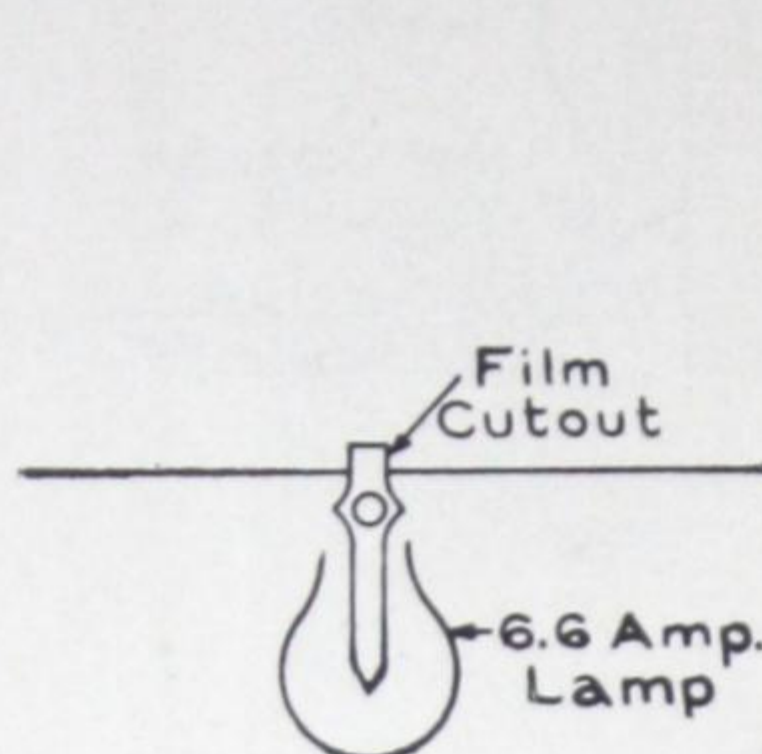


Fig. 23

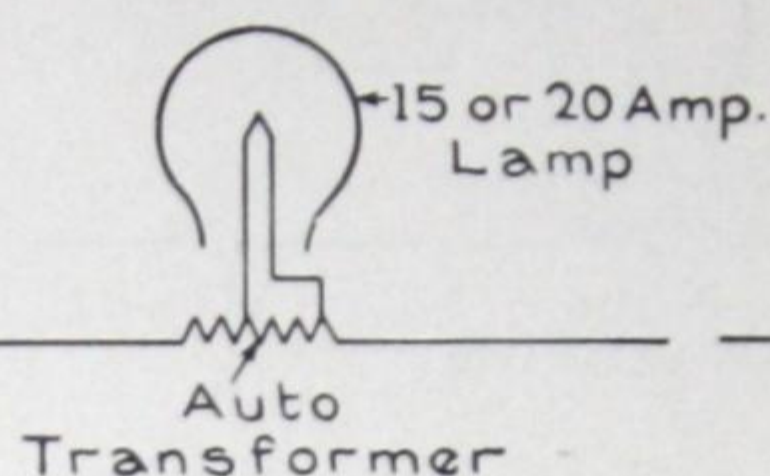


Fig. 24

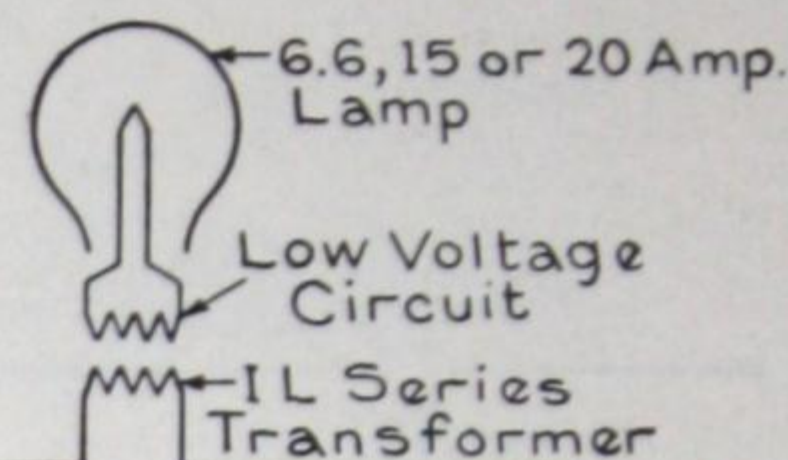


Fig. 25

NUMBER OF STANDARD SERIES LAMPS

NOR- MAL KW RAT- ING	STRAIGHT SERIES LAMPS WITH FILM CUTOUT Fig. 23												LAMPS WITH AUTOTRANSFORMERS Fig. 24				
	6.6 Amp						15 Amp	20 Amp					15 Amp	20 Amp			
	600 Lu- mens	800 Lu- mens	1000 Lu- mens	2500 Lu- mens	4000 Lu- mens	6000 Lu- mens	4000 Lu- mens	4000 Lu- mens	6000 Lu- mens	10,000 Lu- mens	15,000 Lu- mens	25,000 Lu- mens	4000 Lu- mens	6000 Lu- mens	10,000 Lu- mens	15,000 Lu- mens	25,000 Lu- mens
	1	2	3	5	7½	10	15	20	25	30	40	50	60	70	80	90	100
1	21	17	14	6	4	2	4	3	3	3	2	1	3	2	1	1	0
2	42	34	28	12	8	5	8	7	6	3	2	1	7	5	3	2	1
3	64	51	43	18	12	8	12	11	9	5	3	2	11	7	4	3	2
5	107	86	72	30	20	13	20	19	13	9	6	3	18	13	8	5	3
7½	161	129	108	45	30	20	30	29	21	12	9	5	27	19	12	8	5
10	214	172	144	60	40	26	40	39	28	16	11	7	37	26	16	11	6
15	321	258	216	90	60	40	60	58	47	25	16	10	55	39	24	16	10
20	428	344	288	120	80	55	80	78	56	34	22	13	74	52	32	22	12
25	535	430	360	150	100	66	100	97	70	42	28	17	92	65	40	27	16
30	642	516	432	180	120	80	121	117	85	50	34	21	110	78	48	32	20

NUMBER OF STANDARD SERIES LAMPS

NORMAL KW RATING	LAMPS WITH SERIES IL TRANSFORMERS Fig. 25						
	6.6 Amp		15 Amp	20 Amp			
	1000 Lumens	2500 Lumens	4000 Lumens	6000 Lumens	10,000 Lumens	15,000 Lumens	25,000 Lumens
1	12	5	3	2	1	1	0
2	24	10	7	5	3	2	1
3	32	15	10	7	4	3	2
5	53	25	17	12	7	5	3
7½	80	38	26	18	11	7	5
10	107	51	35	25	15	10	6
15	160	76	52	37	23	15	10
20	215	102	70	50	30	20	12
25	268	127	87	62	38	25	16
30	322	152	104	74	46	30	20

NUMBER OF GROUP REPLACEMENT SERIES LAMPS

NOR- MAL KW CAPAC- ITY	STRAIGHT SERIES LAMPS WITH FILM CUTOUT									LAMPS WITH AUTOTRANSFORMERS			LAMPS WITH SERIES IL TRANSFORMERS				
	6.6 Amp						15 Amp	20 Amp			15 Amp	20 Amp	6.6 Amp		15 Amp	20 Amp	
	600 Lu- mens	800 Lu- mens	1000 Lu- mens	2500 Lu- mens	4000 Lu- mens	6000 Lu- mens	4000 Lu- mens	4000 Lu- mens	6000 Lu- mens	4000 Lu- mens	4000 Lu- mens	6000 Lu- mens	1000 Lu- mens	2500 Lu- mens	4000 Lu- mens	4000 Lu- mens	6000 Lu- mens
	1	2	3	5	7.5	10	15	20	25	30	40	50	60	70	80	90	100
1	19	15	13	5	3	2	3	3	2	3	3	2	11	4	3	3	2
2	37	31	26	11	7	5	7	7	5	6	6	4	22	9	6	6	4
3	57	47	40	16	11	8	11	11	8	10	10	6	30	13	9	9	6
5	96	79	67	27	19	12	19	18	12	17	17	12	49	23	16	16	11
7.5	145	119	101	41	29	19	29	28	19	26	25	18	74	35	25	24	17
10	192	159	134	55	38	25	38	37	27	36	35	25	100	47	34	33	24
15	288	238	202	82	57	39	58	57	39	53	52	37	149	70	50	49	35
20	385	318	269	110	77	54	77	76	53	71	70	50	201	94	67	66	48
25	481	397	336	138	96	65	96	94	67	88	87	62	250	117	84	83	59
30	577	477	404	165	116	78	117	115	80	106	105	75	301	140	100	99	71

In order to compensate for ohmic and reactive line losses of load circuit, for fluctuations of primary voltage (between 2200 and 2400 volts) and of frequency of the feeder circuit, all transformers have sufficient load capacity provided over normal lamp capacity rating.

If mixed types of load are to be operated, refer to the nearest sales office for curve showing relation between secondary power-factor and transformer output.

The lamp load values are conservative and take into consideration voltages and frequencies other than normal. Lamp outages, causing series transformers to run open-circuited, are also considered. Neglecting these and assuming normal operating conditions throughout, these values may be increased from 10 to 15 per cent, depending upon the actual nature of the load.

NOVALUX CONSTANT-CURRENT TRANSFORMERS

For Operating A-c, 6.6-amp Series Lighting Loads

STATION TYPE RV-2

2300 VOLTS (WITH 80-PER-CENT-LOAD TAP)—60 CYCLES

For Control Equipment, Refer to Pages 239 to 244, Incl.

NORMAL KW RATING (See Lamp Capacity Table) Pg. 224	CAT. NO.	* LIST PRICE Class GO-51	WT IN LB		GENERAL DATA THESE DATA ARE BASED ON THEORETICAL VALUES. NO GUARANTEES ARE MADE WITHOUT AUTHORITY OF THE NEAREST SALES OFFICE														DIMEN IN IN. (Fig. 26)				
			Ship.	Net	Pri- mary Amp	Pri- mary Kva Input	Normal Second- ary Load Volts	Second- ary Open Circuit Volts	(At Unity P-f. Loads)												A	B	C
									† Efficiencies				† Primary Power-factors										
									Full Load	75 Per Cent Load	50 Per Cent Load	25 Per Cent Load	Full Load	75 Per Cent Load	50 Per Cent Load	25 Per Cent Load							
5	3167600	\$740	600	450	2.68	6.17	758	910	94.0	93.0	90.0	82.0	80	75	50	26	45	23	27				
10	3167602	860	825	650	5.35	12.30	1515	1820	94.7	93.8	91.1	83.3	80	75	50	26	49	25	33				
15	3167604	970	1050	850	8.02	18.45	2275	2725	95.2	94.5	92.0	85.0	80	75	50	26	51	26	34				
20	3167606	1030	1225	1000	10.68	24.60	3030	3630	95.6	94.8	92.4	85.7	80	75	50	26	53	26	36				
25	3167608	1220	1425	1200	13.40	30.80	3790	4550	95.9	95.2	93.0	86.7	80	75	50	26	55	27	37				
30	3167610	1320	1625	1375	16.05	37.00	4550	5455	96.0	95.3	93.1	86.9	80	75	50	26	57	29	41				
40	‡3167614	1680	1925	1625	21.40	49.25	6060	7275	96.1	95.4	93.3	87.1	80	75	50	26	60	29	42				
50	‡3167616	1910	2250	1900	26.80	61.70	7580	9110	96.4	95.7	93.8	87.8	80	75	50	26	64	31	45				
60	‡3167618	2080	2750	2300	32.20	74.10	9100	10910	96.5	95.8	94.0	88.1	80	75	50	26	66	32	47				
70	‡3167620	2370	3075	2625	36.80	84.70	10600	12500	96.6	95.9	94.1	88.4	80	75	50	26	69	34	51				

AUTOMATIC STATION, TYPE RF

2300 VOLTS (NO TAPS)—60 CYCLES

For Control Equipment, Refer to Page 239 to 244, Incl. and Pages 245 to 252, Incl.

NOR- MAL KW RAT- ING (See Lamp Cap- acity Ta- ble) Pg. 225	CAT. NO.	* LIST PRICE Class GO- 51	APPROX WT IN LB		GENERAL DATA THESE DATA ARE BASED ON THEORETICAL VALUES. NO GUARANTEES ARE MADE WITHOUT AUTHORITY OF THE NEAREST SALES OFFICE												APPROX DIMENSIONS IN INCHES (SEE FIG. 27)										
			Ship.	Net	Primary Amp	Trans. Kva Input	Sec- ond- ary Load Volts	Sec- ond- ary Open Cir- cuit Volt- age	At Unity P-f Loads								A	B	C	D	E	F	G	H	J	K	
									Efficiencies				Primary Power- factors														
									Full Ld.	¾ Ld.	½ Ld.	¼ Ld.	Full Ld.	¾ Ld.	½ Ld.	¼ Ld.											
5	3200500	\$960	600	400	3	6.9	758	1035	94.0	92.2	88.7	79.7	75	57	38	21	26 1⁄8	36 3⁄8	17 7⁄8	19 1⁄2	4 1⁄2	3 3⁄8	6 9⁄16	5 13⁄16	12 5⁄16	13 13⁄16	
10	3200501	1120	750	575	6	13.8	1515	2070	95.3	93.8	90.9	83.3	75	57	38	21	29 1⁄4	38 1⁄4	20 3⁄4	20 1⁄2	6	3 11⁄16	8	6 1⁄8	13 5⁄8	15 5⁄8	
15	3200502	1260	950	750	9	20.7	2275	3100	95.8	94.5	92.0	85.2	75	57	38	21	29 1⁄4	39 1⁄8	21 3⁄4	22 3⁄4	7 1⁄2	4 1⁄8	9 1⁄4	6 3⁄8	13 5⁄8	15 5⁄8	
20	3200503	1340	1100	875	12	27.6	3030	4130	96.0	94.6	92.1	85.4	75	57	38	21	30 3⁄8	41 1⁄8	25 1⁄2	24 1⁄2	8	4 7⁄8	9 3⁄4	7 3⁄8	14 3⁄8	16 3⁄8	
25	3200504	1560	1300	1050	15	34.5	3790	5175	96.2	94.9	92.6	86.2	75	57	38	21	37 5⁄8	45	26 3⁄4	26 3⁄4	9	4 3⁄4	10 1⁄2	7 7⁄8	15 15⁄16	21 11⁄16	
30	3200505	1720	1650	1300	18	41.4	4550	6200	96.3	95.2	93.0	86.8	75	57	38	21	38 1⁄8	46 1⁄8	28	27 7⁄8	9	5 7⁄8	11 1⁄2	8 1⁄8	16 3⁄8	21 15⁄16	
† 40	3200506	2180	1850	1500	24	55.2	6060	8260	96.4	95.3	93.1	87.0	75	57	38	21	40 1⁄4	48 3⁄4	31	30 3⁄4	10 1⁄8	5 1⁄2	13 1⁄8	8 3⁄4	17 1⁄4	23	
† 50	3200507	2480	2200	1850	30	69.0	7580	10350	96.5	95.4	93.3	87.6	75	57	38	21	42	50 1⁄8	33 1⁄2	32 3⁄8	11 1⁄2	5 7⁄8	14 1⁄4	8 5⁄8	18 1⁄2	23 1⁄2	
† 60	3200508	2700	2550	2150	36	82.8	9100	12400	96.6	95.6	93.6	87.9	75	57	38	21	42 1⁄2	58 1⁄8	35 1⁄8	34 1⁄4	12	6 1⁄16	15 1⁄16	8 13⁄16	18 15⁄16	23 9⁄16	
† 70	3200509	3080	3000	2500	42	96.6	10600	14500	96.7	95.7	93.7	88.2	75	57	38	21	46 5⁄8	57 3⁄8	38 3⁄8	37 1⁄8	14	6 9⁄16	16 15⁄16	9 5⁄16	20 13⁄16	25 13⁄16	

TYPE RO (POLE TYPE)

2300 VOLTS (WITH 2000-VOLT TAP)—60 CYCLES

For Control Equipment, Refer to Pages 245 to 252, Incl.

NOR- MAL KW RAT- ING (See Lamp Ca- pacity Table) Pg. 226	CAT. NO.	* LIST PRICE Class GO- 51	GAL No. 10-C Oil In- clud- ed in Price	§ APPROX WT IN LB LESS OIL		GENERAL DATA THESE DATA ARE BASED ON THEORETICAL VALUES. NO GUARANTEES ARE MADE WITHOUT AUTHORITY OF THE NEAREST SALES OFFICE												APPROX DIMENSIONS IN IN. (SEE FIG. 28)									
				Ship.	Net	Pri- mary Amp at any Load	Trans. Kva Input at any Load	Nor- mal Sec- ond- ary Load Volt- age	Sec- ond- ary Open- circuit Volt- age	Efficiencies				Primary Power- factors				A	B	C	D	E	F	G	H	J	
										Full Load	¾ Load	½ Load	¼ Load	Full Load	¾ Load	½ Load	¼ Load										
1	3167901	\$580	17	260	200	0.66	1.52	152	225	86.7	83.0	76.6	62.0	75	56	38	20	22 1/4	20 1/4	15 3/4	43 1/4	7 3/4	30 1/4	5 1/4	11 1/2	1 1/8	
2	3167902	600	17	275	215	1.26	2.90	303	430	89.4	86.3	80.7	67.8	75	56	38	20	22 1/4	20 1/4	15 3/4	43 1/4	7 3/4	30 1/4	5 1/4	11 1/2	1 1/8	
3	3167903	630	33	360	285	1.93	4.44	454	660	91.6	89.1	84.6	73.2	75	56	38	20	26 1/4	24 3/4	20 1/4	43 1/4	4	34 1/4	5	13	1 1/8	
5	3167904	680	33	410	330	3.15	7.25	757	1080	93.2	91.2	87.2	77.3	75	56	38	20	26 1/4	24 3/4	20 1/4	43 1/4	4	34 1/4	5	13	1 1/8	
7.5	3167905	720	40	490	405	4.67	10.74	1137	1600	94.2	92.2	88.8	79.8	75	56	38	20	26 1/4	24 3/4	20 1/4	52 1/2	7	40 1/4	5 1/4	13	1 1/8	
10	3167906	800	40	540	455	6.08	13.98	1515	2090	94.7	93.1	90.0	81.8	75	56	38	20	26 1/4	24 3/4	20 1/4	52 1/2	7	40 1/4	5 1/4	13	1 1/8	
15	3167907	920	65	760	615	8.98	20.60	2272	3090	95.4	93.9	91.3	83.9	75	56	38	20	34 1/8	29 3/4	25 1/4	52 3/4	5 7/8	42 1/4	4 3/8	13 1/2	1 1/8	
20	3167908	1060	65	835	700	11.94	27.46	3030	4115	95.8	94.6	92.1	85.5	75	56	38	20	34 1/8	29 3/4	25 1/4	52 3/4	5 7/8	42 1/4	4 3/8	13 1/2	1 1/8	
25	3167909	1230	85	1085	950	14.84	34.13	3787	5110	96.3	95.2	93.0	86.9	75	56	38	20	37 1/8	32 7/8	28 3/8	57 1/2	5 3/4	44 1/4	7 1/2	19	1 1/8	
30	3167910	1360	85	1210	1055	17.80	40.94	4545	6130	96.5	95.4	93.3	87.3	75	56	38	20	37 1/8	32 7/8	28 3/8	57 1/2	5 3/4	44 1/4	7 1/2	19	1 1/8	

For explanation of symbols, see pages 229 and 230.

NOVALUX CONSTANT-CURRENT TRANSFORMERS

For Operating A-c, 6.6-amp, Series Lighting Load

TYPE RO (POLE TYPE) (Cont)

π2300/4600 VOLTS—60 CYCLES

For Control Equipment, Refer to Pages 245 to 252 incl.

NOR- MAL KW RATING (See Lamp Ca- pacity Table) Pg. 226	CAT. NO.	* LIST PRICE Class GO- 51	GAL No. 10-C Oil In- clud- ed in Price	□ APPROX WT IN LB LESS OIL		GENERAL DATA THESE DATA ARE BASED ON THEORETICAL VALUES, NO GUARAN- TEES ARE MADE WITHOUT AUTHORITY OF THE NEAREST SALES OFFICE										APPROX DIMENSIONS IN IN. (SEE FIG. 28)										
				Ship.	Net	|| Pri- mary Amp at any Load	Trans. Kva Input at any Load	Nor- mal Sec- ondary Load Volt- age	Sec- ondary Open- circuit Volt- age	Efficiencies				Primary Power- factors				A	B	C	D	E	F	G	H	J
										Full Load	¾ Load	½ Load	¼ Load	Full Load	¾ Load	½ Load	¼ Load									
1	3200621	\$696	33	360	285	0.66	1.52	152	225	86.7	83.0	76.6	62.0	75	56	38	20	26 1/8	24 3/4	20 1/4	43 1/4	4	34 1/4	5	13	1 1/2
2	3200622	720	33	360	285	1.26	2.90	303	430	89.4	86.3	80.7	67.8	75	56	38	20	26 1/8	24 3/4	20 1/4	43 1/4	4	34 1/4	5	13	1 1/2
3	3200623	756	33	410	330	1.93	4.44	454	660	91.6	89.1	84.6	73.2	75	56	38	20	26 1/8	24 3/4	20 1/4	43 1/4	4	34 1/4	5	13	1 1/2
5	3200624	816	40	490	405	3.15	7.25	757	1080	93.2	91.2	87.2	77.3	75	56	38	20	26 1/8	24 3/4	20 1/4	52 1/2	7	40 1/4	5 1/4	13	5/8
7.5	3200625	864	40	540	455	4.67	10.74	1137	1600	94.2	92.2	88.8	79.8	75	56	38	20	26 1/8	24 3/4	20 1/4	52 1/2	7	40 1/4	5 1/4	13	5/8
10	3200626	960	65	760	615	6.08	13.98	1515	2090	94.7	93.1	90.0	81.8	75	56	38	20	34 1/8	29 3/4	25 1/4	52 3/4	5 1/8	42 1/4	4 3/8	13 1/2	5/8
15	3200627	1104	65	835	700	8.97	20.60	2272	3090	95.4	93.9	91.3	83.9	75	56	38	20	34 1/8	29 3/4	25 1/4	52 3/4	5 1/8	42 1/4	4 3/8	13 1/2	5/8
20	3200628	1272	85	1085	950	11.94	27.46	3030	4115	95.8	94.6	92.1	85.5	75	56	38	20	37 1/8	32 1/8	28 3/8	57 1/2	5 3/4	44 1/4	7 1/2	19	1 1/8
25	3200629	1476	85	1210	1055	14.84	34.13	3787	5110	96.3	95.2	93.0	86.9	75	56	38	20	37 1/8	32 1/8	28 3/8	57 1/2	5 3/4	44 1/4	7 1/2	19	1 1/8
30	3200630	1632	85	1210	1055	17.80	40.94	4545	6130	96.5	95.4	93.3	87.3	75	56	38	20	37 1/8	32 1/8	28 3/8	57 1/2	5 3/4	44 1/4	7 1/2	19	1 1/8

TYPE RO (SUBWAY TYPE)

#2300 VOLTS WITH (2000-VOLT TAP) 60 CYCLES

For Control Equipment, Refer to Pages 245 to 252 incl.

NOR- MAL KW RATING (See Lamp Ca- pacity Table) Pg. 226	CAT. NO.	* LIST PRICE Class GO-51 Includ- ing Oil	OIL (Gal No. 10-C)	APPROX. WT IN LB LESS OIL		GENERAL DATA THESE DATA ARE BASED ON THEORETICAL VALUES, NO GUARANTEES ARE MADE WITHOUT AUTHORITY OF THE NEAREST SALES OFFICE										APPROX DIMENSIONS (SEE FIG. 29, 30)									
				Ship.	Net	Pri- mary Amp at any Load	Trans. Kva Input at any Load	Sec- ondary Load Volts	Sec- ondary Open Circuit Voltage	Efficiencies				Primary Power-factors				In Inches						Angle in Deg	
										Full Load	3/4 Load	1/2 Load	1/4 Load	Full Load	3/4 Load	1/2 Load	1/4 Load	A	B	C	D	E	F		
1	3200781	\$900	20	640	440	0.66	1.52	152	225	86.7	83.0	76.6	62.0	75	56	38	20	38 3/8	22	17 1/2	21 1/4	45	25		
2	3200782	920	20	675	475	1.26	2.90	303	430	89.4	86.3	80.7	67.8	75	56	38	20	38 3/8	22	17 1/2	21 1/4	45	25		
3	3200783	940	20	705	505	1.93	4.44	454	660	91.6	89.1	84.6	73.2	75	56	38	20	38 3/8	22	17 1/2	21 1/4	45	25		
5	3200784	980	50	1025	825	3.15	7.25	757	1080	93.2	91.2	87.2	77.3	75	56	38	20	41 5/8	28 1/4	23 1/8	27 1/2	45	25		
7.5	3200785	1010	50	1100	900	4.67	10.74	1137	1600	94.2	92.2	88.8	79.8	75	56	38	20	41 5/8	28 1/4	23 1/8	27 1/2	45	25		
10	3200786	1070	50	1150	950	6.08	13.98	1515	2090	94.7	93.1	90.0	81.8	75	56	38	20	41 5/8	28 1/4	23 1/8	27 1/2	45	25		
15	3200787	1250	65	1310	1070	8.97	20.60	2272	3090	95.4	93.9	91.3	83.9	75	56	38	20	46 1/8	29 3/4	25 1/8	29 3/4	45	25		
20	3200788	1500	65	1455	1155	11.94	27.46	3030	4115	95.8	94.6	92.1	85.5	75	56	38	20	46 1/8	29 3/4	25 1/8	29 3/4	45	25		
(A) 25	3200789	1710	95	1760	1560	14.84	34.13	3787	5110	96.3	95.2	93.0	86.9	75	56	38	20	53 3/8	33 1/2	29 3/8	33 1/2	45	25		
(A) 30	3200790	1830	90	1850	1700	17.80	40.94	4545	6130	96.5	95.4	93.3	87.3	75	56	38	20	53 3/8	33 1/2	29 3/8	33 1/2	45	25		
(B) 25	3200791	1710	95	2700	2475	14.84	34.13	3787	5110	96.3	95.2	93.0	86.9	75	56	38	20	77 1/2	30 1/2	22 1/4	28 3/4	30	30		
(B) 30	3200792	1830	95	2700	2475	17.80	40.94	4545	6130	96.5	95.4	93.3	87.3	75	56	38	20	77 1/2	30 1/2	22 1/4	28 3/4	30	30		

TYPE ROC (POLE TYPE)

††2300 VOLTS (WITH 2000-VOLT TAP), 60 CYCLES

For Control Equipment, Refer to Pages 245 to 252 incl.

NOR- MAL KW RAT- ING (See Lamp Ca- pacity Table) Pg. 226	CAT. NO.	* LIST PRICE Class GO- 51	OIL (Gal No. 10-C)	†† APPROX WT IN LB LESS OIL		GENERAL DATA																	
						THESE DATA ARE BASED ON THEORETICAL VALUES. NO GUARANTEES ARE MADE WITHOUT AUTHORITY OF THE NEAREST SALES OFFICE																	
				Approximate Primary Amps				Approximate Transformer Kva Input				Nor- mal Sec- ondary Load Volt- age	Sec- ondary Open- circuit Volt- age	Approximate Efficiencies				Approximate Primary Power- factors					
Ship.	Net	Full Load	¾ Load	½ Load	¼ Load	Full Load	¾ Load	½ Load	¼ Load	Full Load	¾ Load	½ Load	¼ Load	Full Load	Open- circuit Volt- age	Full Ld.	¾ Ld.	½ Ld.	¼ Ld.	Full Ld.	¾ Ld.	½ Ld.	¼ Ld.
5	3200545	\$1020	33	520	420	2.35	1.83	1.39	1.08	5.41	4.20	3.19	2.49	757	1050	93.2	91.2	87.2	77.3	99	98	90	65
7.5	3200546	1080	40	600	500	3.49	2.70	2.04	1.57	8.04	6.22	4.69	3.61	1137	1560	94.2	92.2	88.8	79.8	99	98	90	65
10	3200547	1200	40	700	600	4.63	3.57	2.69	2.04	10.65	8.22	6.18	4.70	1515	2080	94.7	93.1	90.0	81.8	99	98	90	65
15	3200548	1480	65	900	750	6.90	5.32	3.97	2.99	15.85	12.22	9.13	6.88	2272	3090	95.4	93.9	91.3	83.9	99	98	90	65
20	3200759	1700	65	1065	900	9.17	7.03	5.24	3.91	21.10	16.17	12.05	9.00	3030	4115	95.8	94.6	92.1	85.5	99	98	90	65
25	3200760	2020	85	1465	1300	11.40	8.74	6.50	4.82	26.20	20.10	14.95	11.07	3787	5110	96.3	95.2	93.0	86.9	99	98	90	65
30	3200761	2140	85	1565	1400	13.65	10.46	7.76	5.75	31.40	24.10	17.85	13.22	4545	6130	96.5	95.4	93.3	87.3	99	98	90	65

For dimensions, see Fig. 31 and 32.

For explanation of symbols, see pages 229 and 230.

NOVALUX CONSTANT-CURRENT TRANSFORMERS

For A-c, 6.6-amp Series Lighting Circuits

TYPE ROC (SUBWAY TYPE)

% 2300 VOLTS (WITH 2000-VOLT TAP), 60 CYCLES

SINGLE-CIRCUIT SECONDARIES

For Control Equipment, Refer to Pages 245 to 252 incl.

NOR- MAL KW RAT- ING (See Lamp Ca- pacity Table) Pg. 226	CAT. NO.	* LIST PRICE Class GO- 51 Incl. Oil	OIL (Gal No. 10-C)	APPROX WT IN LB LESS OIL		GENERAL DATA																	
						THESE DATA ARE BASED ON THEORETICAL VALUES. NO GUARANTEES ARE MADE WITHOUT AUTHORITY OF THE NEAREST SALES OFFICE																	
						Approximate Primary Amp				Approximate Primary Kva				Nor- mal Sec- ondary Load Volt- age	Sec- ondary Open Circuit Volt- age	Approximate Efficiencies				Approximate Primary Power- factors			
						Full Load	¾ Load	½ Load	¼ Load	Full Load	¾ Load	½ Load	¼ Load			Full Ld.	¾ Ld.	½ Ld.	¼ Ld.	Full Ld.	¾ Ld.	½ Ld.	¼ Ld.
5	3200770	\$1520	45	1200	1000	2.35	1.83	1.39	1.08	5.41	4.20	3.19	2.49	757	1050	93.2	91.2	87.2	77.3	99	98	90	65
7.5	3200771	1600	45	1225	1025	3.49	2.70	2.04	1.57	8.04	6.22	4.69	3.61	1137	1560	94.2	92.2	88.8	79.8	99	98	90	65
10	3200772	1680	60	1450	1200	4.63	3.57	2.69	2.04	10.65	8.22	6.18	4.70	1515	2080	94.7	93.1	90.0	81.8	99	98	90	65
15	3200773	2000	60	1500	1250	6.90	5.32	3.97	2.99	15.85	12.22	9.13	6.88	2272	3090	95.4	93.9	91.3	83.9	99	98	90	65
20	3200774	2220	95	1900	1600	9.17	7.03	5.24	3.91	21.10	16.17	12.05	9.00	3030	4115	95.8	94.6	92.1	85.5	99	98	90	65
25	3200775	2540	95	2100	1800	11.40	8.74	6.50	4.82	26.20	20.10	14.95	11.07	3787	5110	96.3	95.2	93.0	86.9	99	98	90	65
30	3200776	2660	125	2500	2150	13.65	10.46	7.76	5.75	31.40	24.10	17.85	13.22	4545	6130	96.5	95.4	93.3	87.3	99	98	90	65

For dimensions, see Fig. 33.

SPECIAL FEATURES

ALL TRANSFORMERS

- * 1. For special voltages other than 2300 volts except 2300/4600 on the double-rated Type RO, refer to nearest sales office.
2. For 50 cycles use 60-cycle prices.
3. For special frequency and special voltage refer to nearest sales office.
4. For special secondary current only (from 5.5 to 20 amperes), use 6.6-ampere prices.
5. All transformers are designed to conform with A.I.E.E. standards No. 12.
6. Lightning arresters must be used on both primary and secondary for protection unless the circuits are entirely underground. They are not included with the transformers. Refer to page 235.

TYPE RV-2

† Built with multicircuit secondary. Can be operated either single circuit or multicircuit.

* 1. For special frequency only (25, 30, or 40 cycles) in ratings up to and including 50 kw, add 25 per cent.

† 2. Efficiency and power-factor for full load based on nameplate kw rating and for 75-, 50-, and 25-per-cent load, based on using 80-per-cent load connections. Efficiency based on average measured iron loss at rated voltage and frequency with secondary circuit opened and I²R loss at 75 C.

¶ 3. The 2300-volt tap is good for operation from 2200 to 2400 volts. No primary-voltage tap furnished, but tap furnished for operation at 80 per cent of maximum load.

TYPE RF

‡ Built with multicircuit secondary. Can be operated either single circuit or multicircuit.

* 1. For special frequency only (25, 30, or 40 cycles) in ratings up to and including 50 kw, add 25 per cent.

△ 2. All transformers will operate from 2200 to 2400 volts. No primary-voltage tap or partial load-tap provided. If 80-per-cent load tap is desired, add 10 per cent.

TYPE RO (Pole-type) 2300-VOLT

* 1. For special frequency only (25, 30, or 40 cycles) in ratings up to and including 20 kw, add 30 per cent.

° 2. The 2300-volt tap is good for operation from 2200 to 2400 volts and an extra tap is provided for operation at 2000 volts.

§ 3. Weight of oil is not included in tabulation—add 7.25 lb per gallon.

4. For prices less oil, refer to nearest sales office.

5. Weight of hanger hooks not included in tabulation—add the following:

- 1, 2, 3, or 5 kw—30 lb
- 7.5 and 10 kw —40 lb
- 15 and 20 kw —50 lb
- 25 and 30 kw —60 lb

6. For omission of hanger hooks, deduct \$6.00 from list price.

7. Transformers have single-circuit secondaries. If multicircuit is desired, refer to nearest sales office.

8. Suspension hooks are furnished with all Type RO transformers for pole mounting, but where the net weight exceeds 1000 lb the trans-

NOVALUX CONSTANT-CURRENT TRANSFORMERS

Types RV-2, RF, RO, and ROC

SPECIAL FEATURES (Cont)

formers must be mounted on a platform to assure safe installation.

TYPE RO (Pole Type) 2300/4600-VOLT

|| Primary current at 2300 volts, divide by two for 4600 volts.

*1. For special frequency and/or special voltage other than 2300/4600, refer to nearest sales office.

π 2. Transformer will operate satisfactorily on 2200 or 2400 volts when connected for 2300 volts or on 4400 to 4800 volts when connected for 4600 volts.

□ 3. Weight of oil not included in tabulation—add 7.25 lb per gallon.

4. For prices less oil, refer to nearest sales office.

5. Weight of hanger hooks not included in tabulation—add the following:

1, 2, and 3 kw	—30 lb
5 and 7.5 kw	—40 lb
10 and 15 kw	—50 lb
20, 25, and 30 kw	—60 lb

6. For omission of hanger hooks deduct \$6.00 from the list price.

7. Transformers have single-circuit secondaries. If multicircuit is desired, refer to nearest sales office.

8. Suspension hooks are furnished with all Type RO transformers for pole mounting, but where the net weight exceeds 1000 lb the transformers must be mounted on a platform to assure safe installation.

TYPE RO (Subway Type)

(A) Single-deck.

(B) Double-deck.

* 1. For special frequency only (25, 30, or 40 cycles), in ratings up to and including 20 kw, add 30 per cent.

2. The 2300-volt tap is good for operation from 2200 to 2400 volts and an extra tap is provided for operation at 2000 volts.

□ 3. Weight of oil is not included in tabulation—add 7.25 lb per gallon.

4. For prices less oil, refer to nearest sales office.

TYPE ROC (Pole Type)

* 1. For special frequency and special voltage, refer to nearest sales office.

†† 2. The 2300-volt tap is good for operation from 2200 to 2400 volts and an extra tap is provided for operation at 2000 volts. Primary power-factor will be slightly lower when tap is used.

†† 3. Weight of oil is not included in tabulation—add 7.25 lb per gallon.

4. For prices less oil, refer to nearest sales office.

5. Weight of hanger hooks not included in tabulation—add the following:

1, 2, 3, and 5 kw	—30 lb
7.5 and 10 kw	—40 lb
15 and 20 kw	—50 lb
25 and 30 kw	—60 lb

6. For omission of hanger hooks, deduct \$6.00 from the list price.

7. Transformers have single-circuit secondaries. If multicircuit is desired, refer to nearest sales office.

8. Suspension hooks are furnished with all Type ROC transformers for pole mounting, but where the net weight exceeds 1000 lb the transformers must be mounted on a platform to assure safe installation.

TYPE ROC (Subway Type)

* 1. For special frequency and special voltage, refer to nearest sales office.

% 2. The 2300-volt tap is good for operation from 2200 to 2400 volts, and an extra tap is provided for operation at 2000 volts. Primary power-factor will be slightly lower when tap is used.

□ 3. Weight of oil is not included in the tabulation—add 7.25 lb per gallon.

4. For prices less oil, refer to nearest sales office.

NOVALUX CONSTANT-CURRENT TRANSFORMERS

No. 10-C Transil Oil

If the average of a number of tests shows that the oil does not have sufficiently high insulating value, it will require drying.

DRYING OIL

To facilitate the drying of oil, the General Electric Company has developed a portable "transformer-oil dryer and filter." This outfit is a valuable adjunct to any large central station especially if high-voltage transformers are used.

FILTERING

Before placing the oil in the transformer tanks, care must be taken to remove any particles of foreign matter, scale, etc., which may have adhered to the interior of the drum too firmly to be removed by the cleaning process used at the oil refinery, but which may have become loosened by the continual swashing of the oil during transit. To call particular attention to this fact, a small linen caution tag is wired to the bung of each iron drum.

CAUTION

Always strain oil through several thicknesses of cheese cloth, or equivalent, before putting it in transformers. Drums are carefully cleaned before shipment, but scale may have been dislodged during transportation.

TESTS FOR CUSTOMERS

The General Electric Company is constantly receiving requests from customers for analysis of oil samples to determine the condition of Transil oils in their possession. The following routine has been established to take care of such requests:

1. Tests to determine the condition of Transil oil will be made and charged for at the rate of \$2.00 per sample.
2. A formal requisition should be issued calling for the tests giving the following information:
 - (a) Customer's reason for requesting tests.
 - (b) Serial No. and rating of transformer from which sample was taken.
 - (c) Does sample represent oil originally furnished with transformer?
 - (d) If not, when was oil replaced?
3. The sample should consist of not less than 1 quart of oil and should be forwarded, prepaid to Mr. G. W. Wade, Pittsfield Works.
4. Preferably cork-stoppered bottles which have previously been thoroughly cleaned and dried should be used for shipment.

PRICES AND SHIPMENTS

NO. 10-C OIL

(Effective Feb. 1, 1934)

Shipped from	NET PRICE PER GALLON EXCLUSIVE OF CONTAINERS F.O.B. POINT OF SHIPMENT			
	Quantity			
	1-99 Gallons	2-9 Drums *	10 Drums and above *	Tank Car Shipment
Paulsboro, N. J.....	\$0.33	\$0.29	\$0.24	\$0.21
Philadelphia, Pa.....	.34	.30	.25	
New York, N. Y.....	.35	.31	.26	
Boston, Mass.....	.36	.32	.27	
Buffalo, N. Y.....				
Charleston, W. Va.....				
Cleveland, Ohio.....				
Detroit, Mich.....				
Erie, Pa.....				
Pittsburgh, Pa.....				
Pittsfield, Mass.....	.37	.33	.28	...
Chicago, Ill.....				
Cincinnati, Ohio.....				
Ft. Wayne, Ind.....				
Milwaukee, Wisc.....				
Davenport, Iowa.....	.38	.34	.29	
Houston, Texas.....				
St. Louis, Mo.....				
Atlanta, Ga.....	.39	.35	.30	
Charlotte, N. C.....				
Minneapolis, Minn.....				
Dallas, Texas.....	.40	.36	.31	
Kansas City, Mo.....				
Oklahoma City, Okla.....				
Omaha, Neb.....				
Phoenix, Ariz.....	.43	.39	.34	
Denver, Colo.....	.45	.41	.36	
Salt Lake City, Utah.....				
Richmond, Calif.....	.33	.29	.24	.21
San Francisco, Calif.....	.34	.30	.25	
Los Angeles, Calif.....	.36	.32	.27	
Portland, Ore.....				
Seattle, Wash.....	.38	.34	.29	

* A standard drum of No. 10-C Transil oil furnished from Eastern refinery contains 55 gallons; a standard drum furnished from Pacific Coast refinery contains 53 gallons. On an individual order, the price per gallon is determined by the number of drums and billing will be for the actual quantity in gallons included in each shipment.

Net weight of oil, 7.45 lb per gallon.

Shipping weight of oil (separate from transformer), 9 lb per gallon.

Listed prices of transformers, regulators, and oil fuse cutouts include oil.

SHIPPING POINTS

When transformers and feeder regulators are not shipped oil-filled, or are not shipped from stock, our practice in general, with regard to shipment of the oil for such apparatus, will be as follows:

1. For destinations in the Pacific Coast or Salt Lake territory—

Oil will be shipped from Richmond, Calif.

If the purchaser specifies that the oil is to be shipped from another Pacific Coast point, the price of the apparatus should be increased by an amount equal to the differential between the price of the oil at Richmond

NOVALUX CONSTANT-CURRENT TRANSFORMERS

No. 10-C Transil Oil

and at the Pacific Coast shipping point as follows:

OIL SHIPPED FROM	Net ADDITION
San Francisco, Calif.	1¢ per gallon
Los Angeles, Calif.	3¢ per gallon
Portland, Ore.	3¢ per gallon
Seattle, Wash.	5¢ per gallon

2. For destinations other than the Pacific Coast or Salt Lake territory—

Oil will be shipped from Paulsboro, N. J.

When oil is shipped separately from the apparatus for which it is to be used, shipment is made in hermetically sealed metal cans or in steel drums—the latter being provided with screw bungs which are sealed before shipment.

SHIPMENT IN CANS

When, in accordance with our standard practice, oil in small quantities is shipped in cans in conjunction with transformers or regulators, cost of cans is included in the price. No credit can be allowed for returned cans.

When oil, sold as a supply article, is shipped in cans, an extra charge will be made for the cans. This charge will be based on the value of the cans at the time that shipment is actually made. The present value of cans is as follows:

One 1-gal can in box.....	\$0.50
One 1½-gal can in box.....	.70
One 2-gal can in box.....	.80
One 3-gal can in box.....	.90
One 5-gal can in box.....	1.00
Two 5-gal cans in box.....	1.65
*Six 1-gal cans in box.....	1.85

* Available for Pacific Coast and Salt Lake City shipments only.

Cans cannot be returned for credit.

SHIPMENTS IN DRUMS

When oil is shipped in returnable steel drums from Paulsboro, N. J., Denver, Colo., Salt Lake City, Utah, or Richmond, Calif., either when sold in conjunction with apparatus or as a supply article, an extra charge will be made for drums, but customer will be credited with a like amount upon the return of the drums in good condition within 4 months from date of invoice, freight prepaid, to the Vacuum Oil Co., Paulsboro, N. J., General Electric Co., Denver, Colo., or Salt Lake City, Utah, or Standard Oil Co., Richmond, Calif., depending upon which point the oil was shipped from. This charge and credit will be based

on the value of these drums at the time shipment is actually made. The present value of these drums is \$15.00 each.

Notice of return, stating drum numbers as indicated on brass plate or embossed on head, should be sent to the office through which the order was placed.

No credit will be given except on drums which have been shipped by us.

When instructing customers in regard to the return of the steel drums for credit, advise them to refer to the drums as steel drums, instead of steel barrels.

SHIPMENTS IN TANK CARS

When oil is shipped in tank cars from Paulsboro, N. J., either when sold in conjunction with apparatus or when sold as a supply article, no rental charge will be made for the tank cars except when they are retained by the customer longer than 48 hours for unloading them after their arrival at destination, in which case they will be charged at the rate of \$0.015 per day for each 100 gal capacity.

When oil is shipped in tank cars from Richmond, Calif., either when sold in conjunction with apparatus or when sold as a supply article, no rental charge will be made for the tank cars.

The above are the present rental charges but our charge to the customer will be based on charges to us by the oil companies as effective at the time that shipment is actually made.

The above are rental charges and do not include any demurrage charge made by any transportation or railroad company.

RETURNING TRANSIL OIL FOR EXCHANGE

No. 10-C Transil oil may be returned for exchange if it is not of too poor quality, and the quantity is sufficiently large to warrant the expense of handling.

Transil oil in quantities less than five drums will not be considered for an exchange proposition, except in special cases.

Transil oil should never be returned for exchange without first taking the matter up with the General Office and obtaining proper instructions covering its return.

All exchange prices will be based on the customer purchasing an equal amount of new oil, the exact price per gallon depending largely on the condition of the old oil.

NOVALUX CONSTANT-CURRENT TRANSFORMERS

Dimensions—Types RF and RO

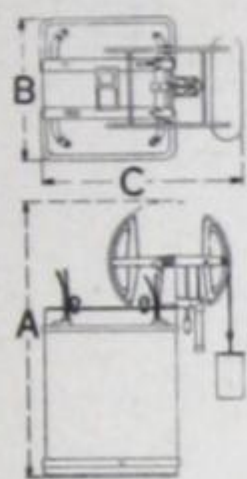


Fig. 26
Type RV-2

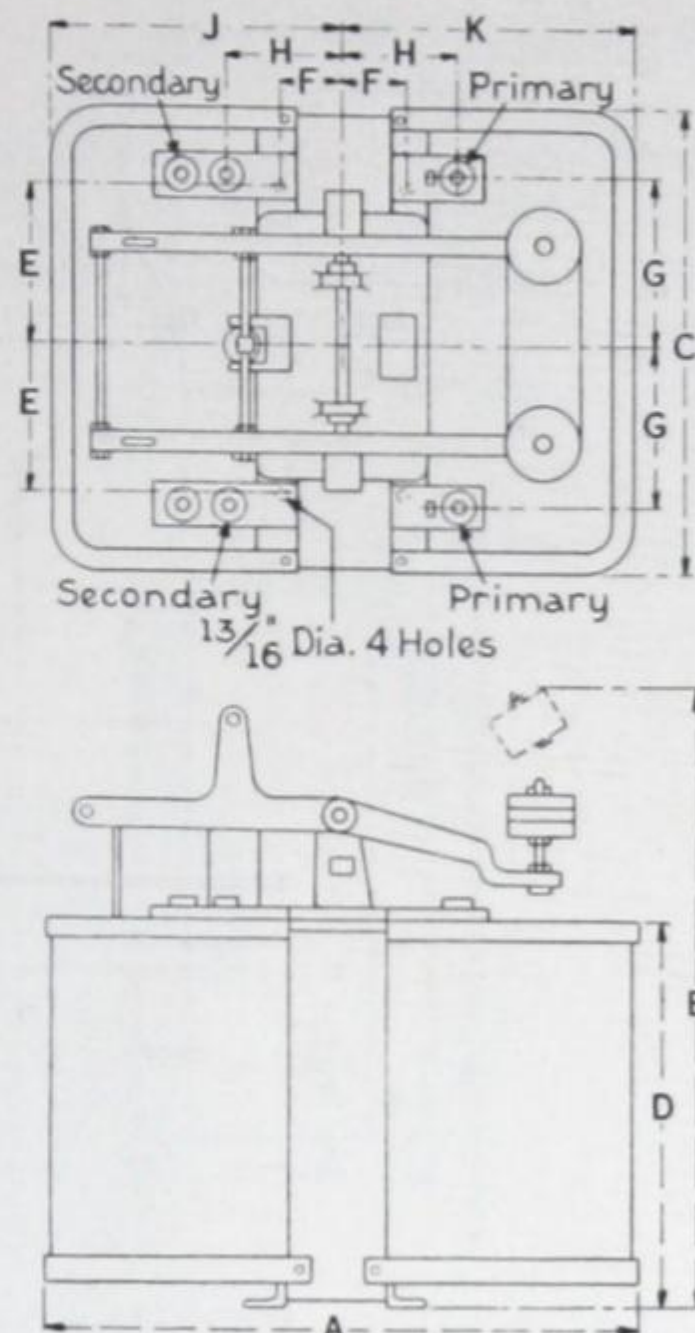


Fig. 27
Type RF

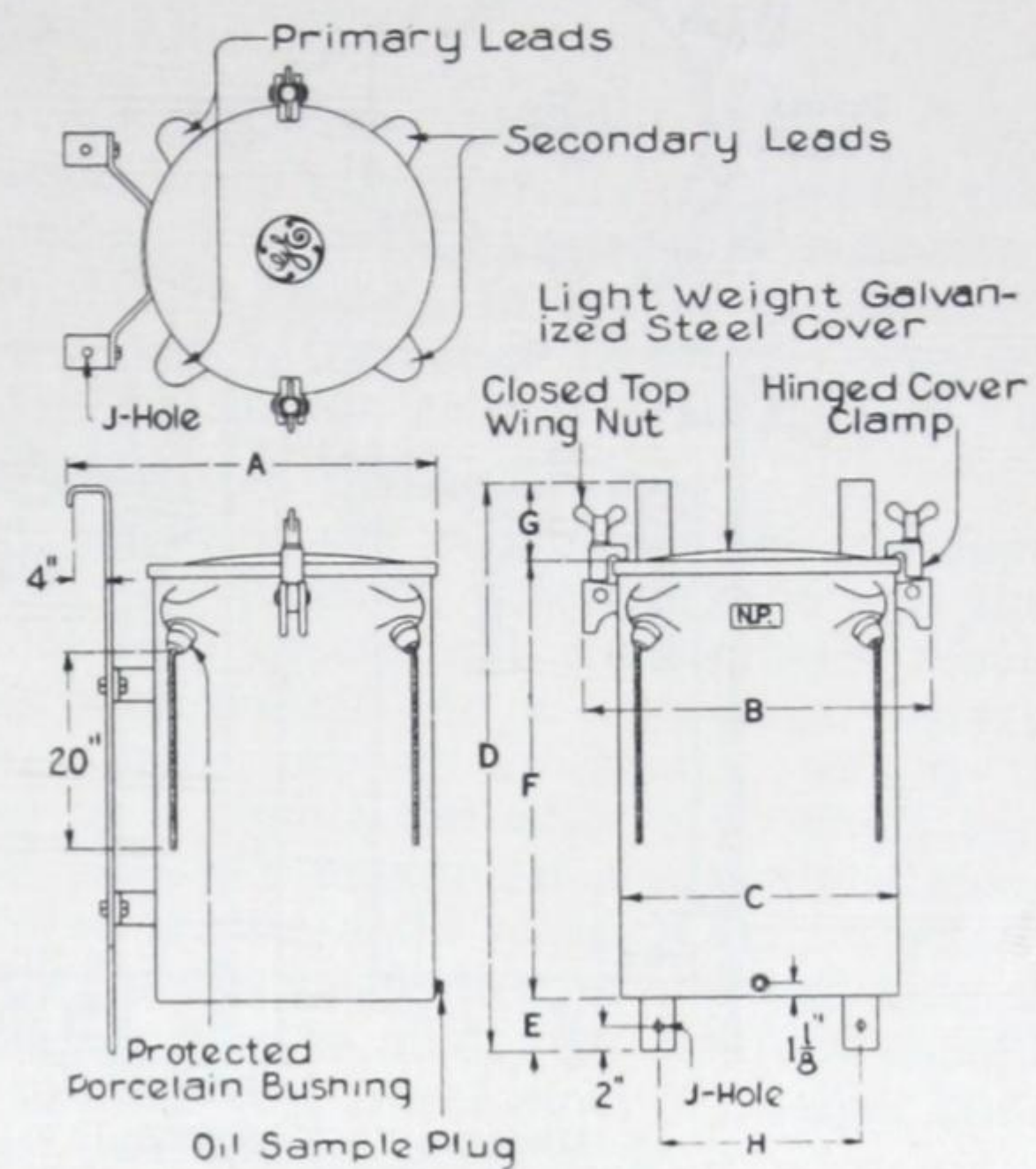


Fig. 28
Pole Type RO

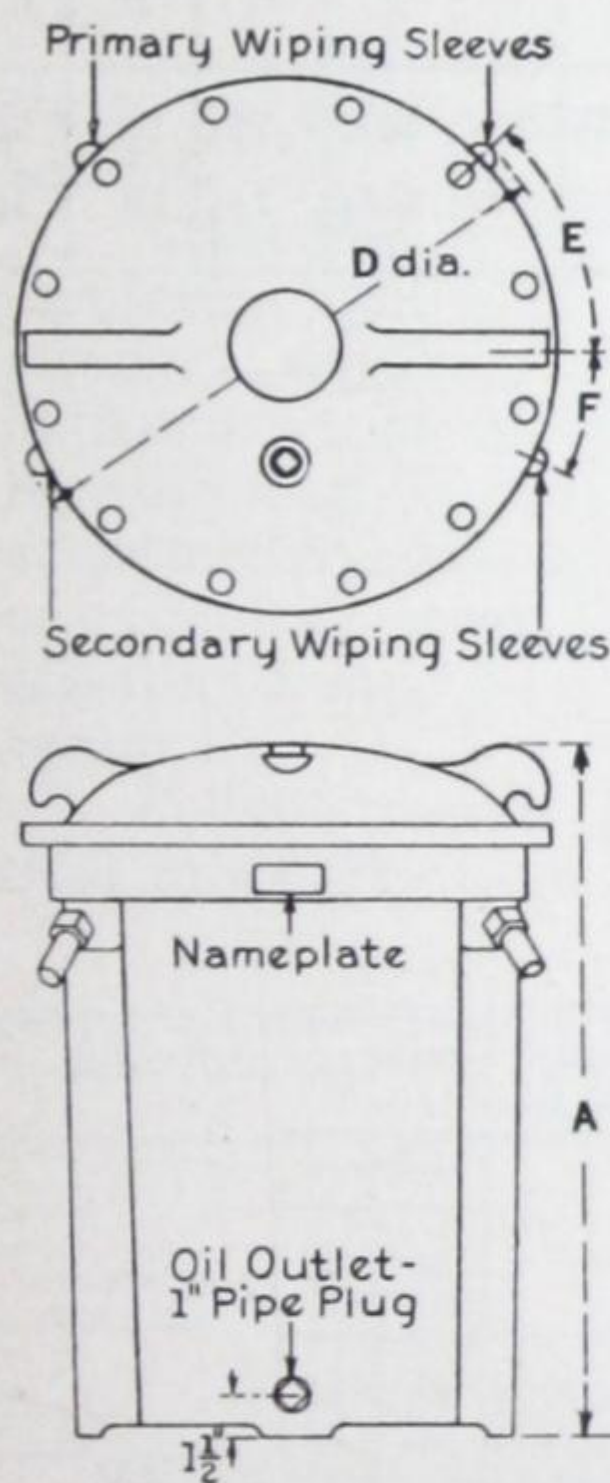


Fig. 29
Subway Type RO, single-deck type

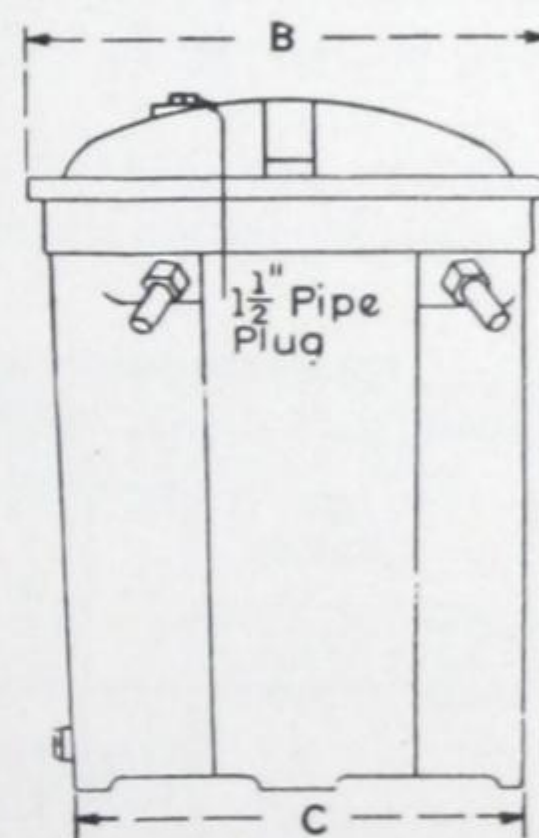
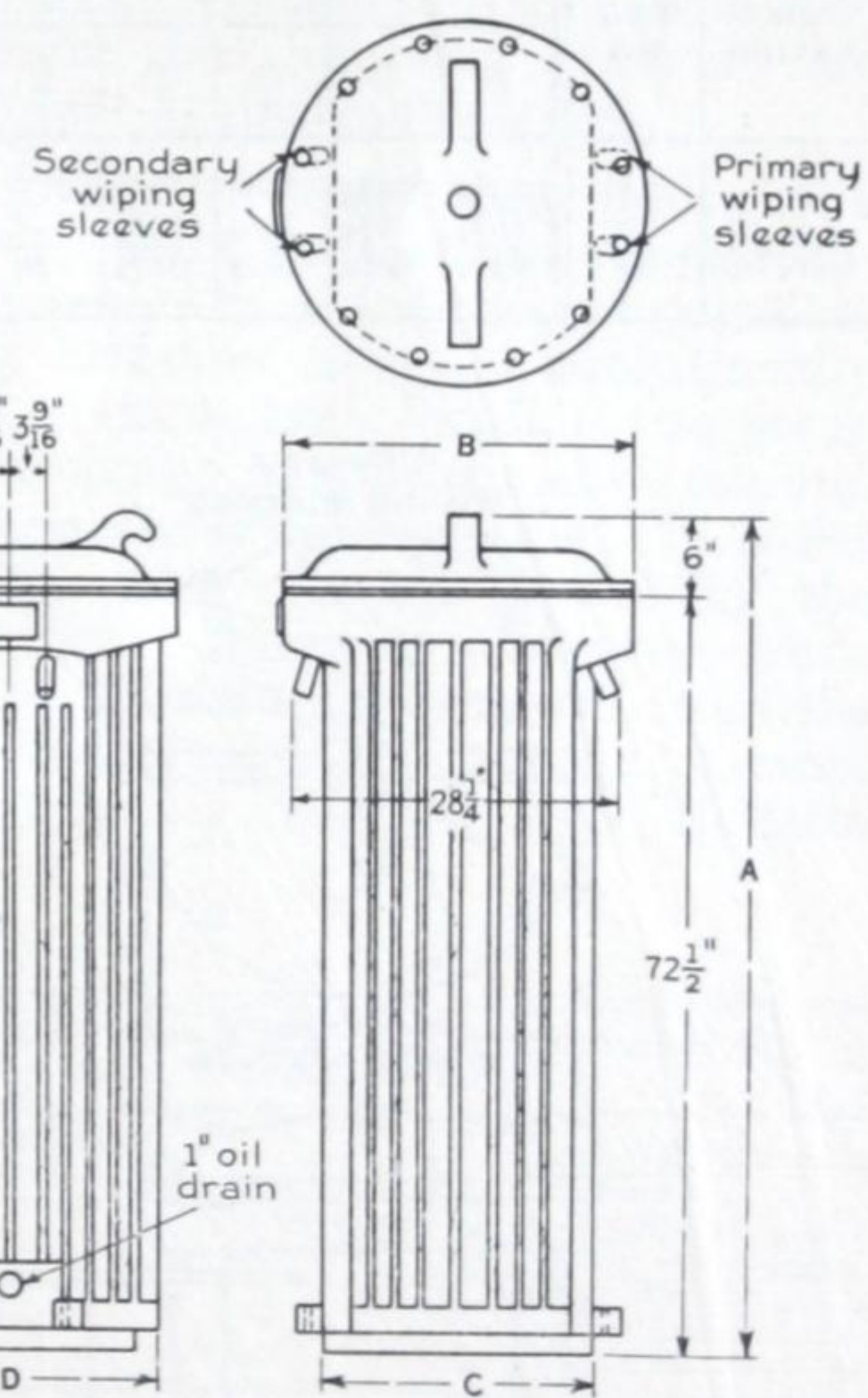
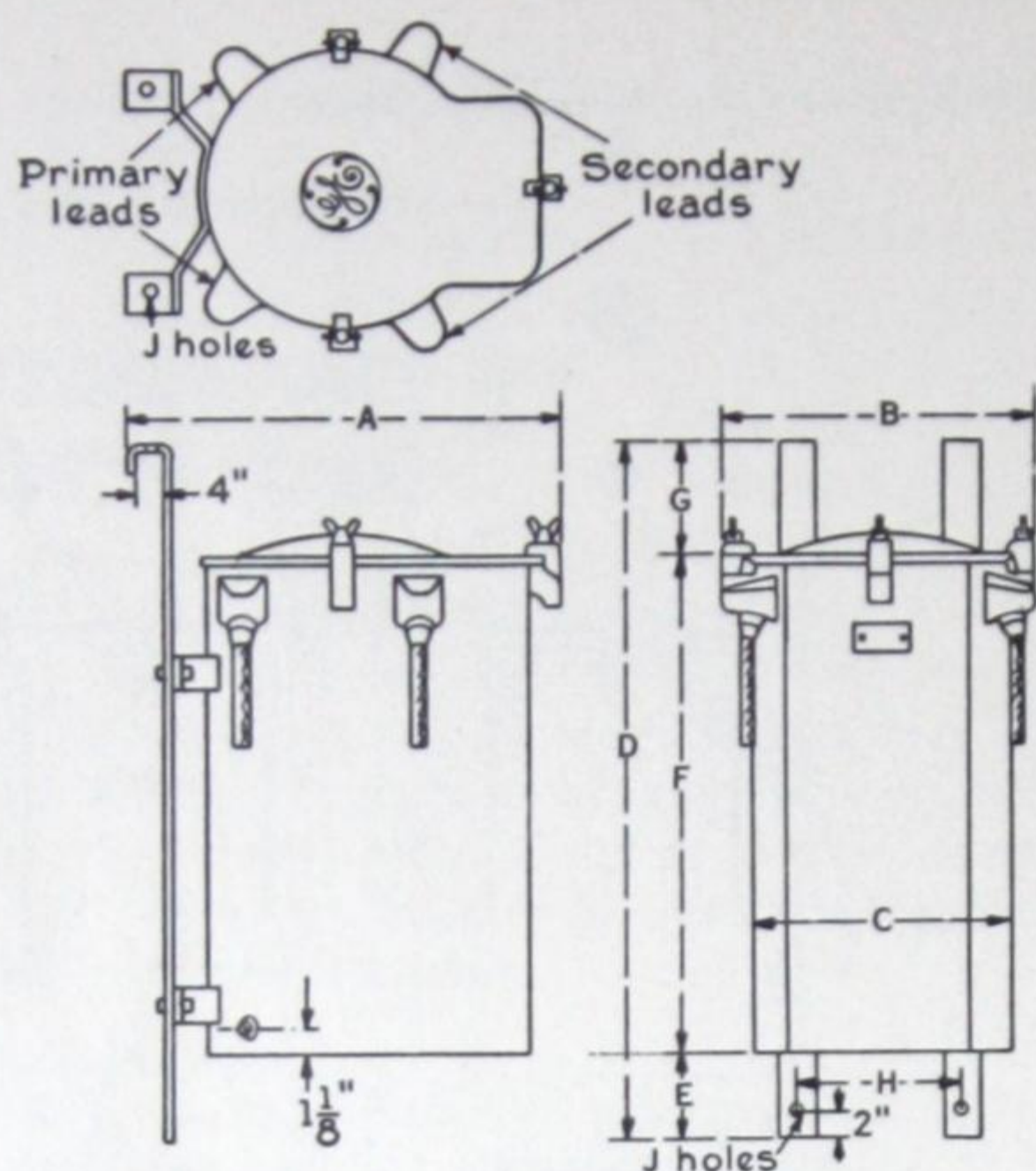


Fig. 30
Subway Type RO, double-deck type

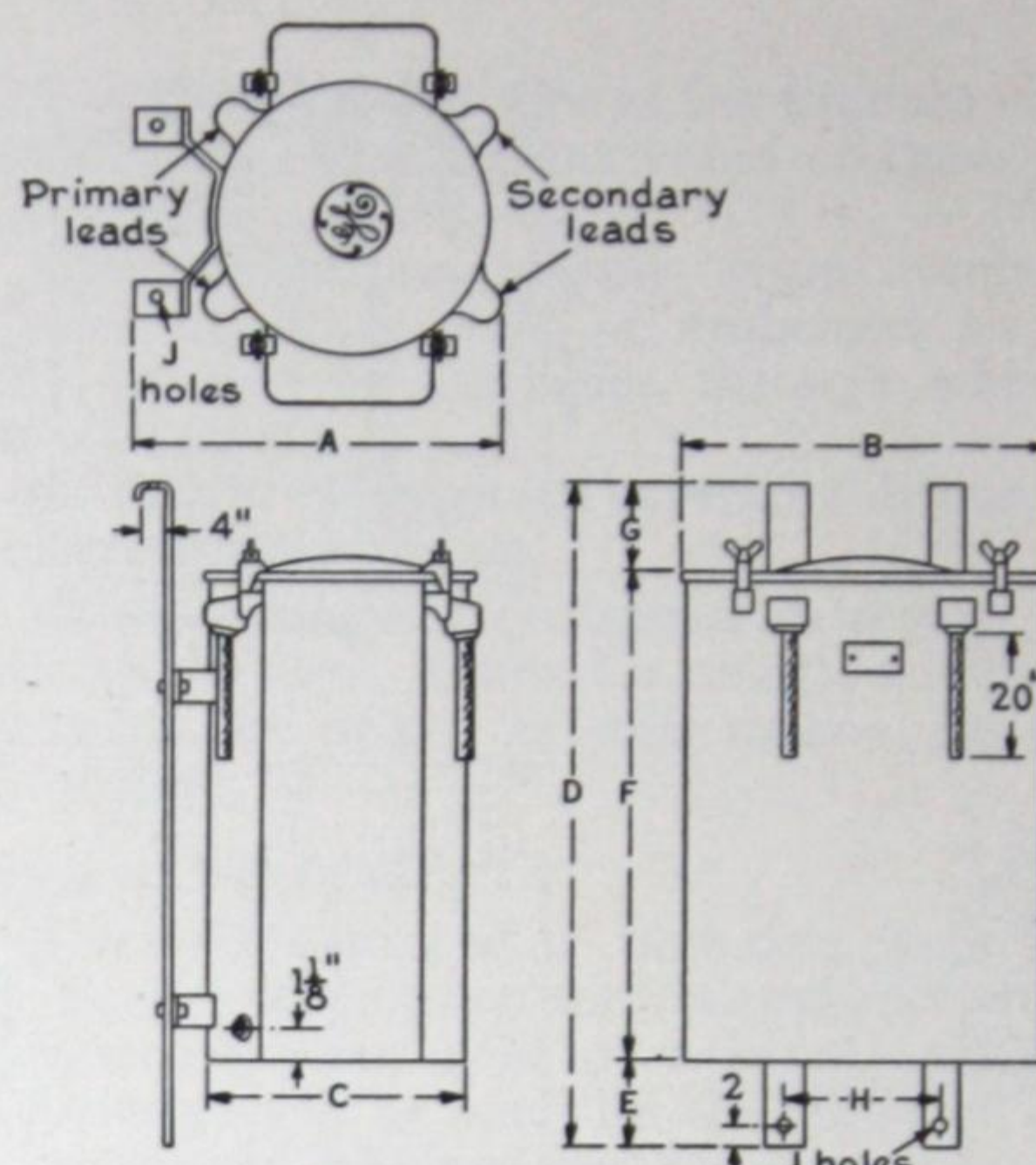


NOVALUX CONSTANT-CURRENT TRANSFORMERS

Dimensions—Type ROC



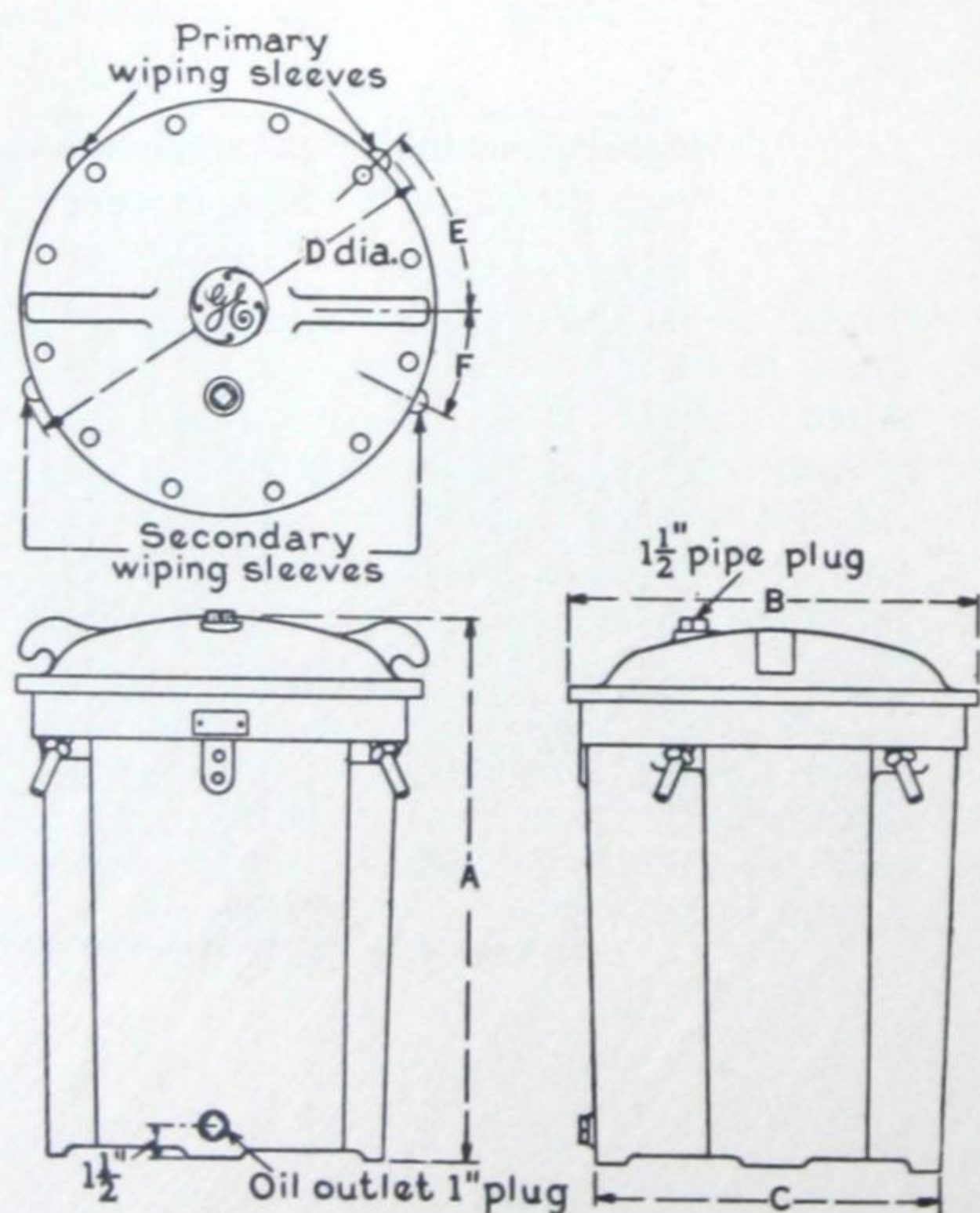
(Drawing No. K-4802790)

Fig. 31
Pole Type

(Drawing No. K-4802791)

Fig. 32
Pole Type

KW RATING	FIG. NO.	APPROX DIMENSIONS IN INCHES									KW RATING	FIG. NO.	APPROX DIMENSIONS IN INCHES								
		A	B	C	D	E	F	G	H	J			A	B	C	D	E	F	G	H	J
5	31	35 1/4	24 3/4	20 1/4	43 1/4	4	34 1/4	5	13	9 1/16	25	32	35 1/2	41 5/16	28 3/8	57 1/2	5 3/4	44 1/4	7 1/2	19	1/8
7.5, 10	31	35 1/4	24 3/4	20 1/4	52 3/4	7	40 1/4	5 1/4	13	7 7/8	30	32	35 1/2	41 5/16	28 3/8	57 1/2	5 3/4	44 1/4	7 1/2	19	1/8
15, 20	31	40 1/4	29 3/4	25 1/4	52 3/4	5 7/8	42 1/4	4 5/8	13 1/2	7 7/8											



(Drawing No. K-3744853)

Fig. 33
Subway type

Kw Rating	DIMENSIONS IN INCHES (Fig. 33)					
	A	B	C	D	Degrees	
					E	F
5	41 5/8	28 1/4	23 7/8	27 1/2	45	25
7.5	41 5/8	28 1/4	23 7/8	27 1/2	45	25
10	46 1/8	29 3/4	25 7/8	29 3/4	45	25
15	46 1/8	29 3/4	25 7/8	29 3/4	45	25
20	53 5/8	33 1/2	29 3/8	33 1/2	45	25
25	53 5/8	33 1/2	29 3/8	33 1/2	45	25
30	58 1/8	37	32 1/8	37	45	25

PROTECTIVE DEVICES

For Constant-current Transformers

TYPES RO AND ROC (POLE AND SUBWAY TYPE)

LIGHTNING ARRESTERS

Pellet lightning arresters are recommended for protection of both the primary and secondary sides of constant-current transformers. Their installation is a warranted investment because lightning flashovers of bushings are minimized, failures of transformers are reduced, and the blowing of primary fuses is practically eliminated,

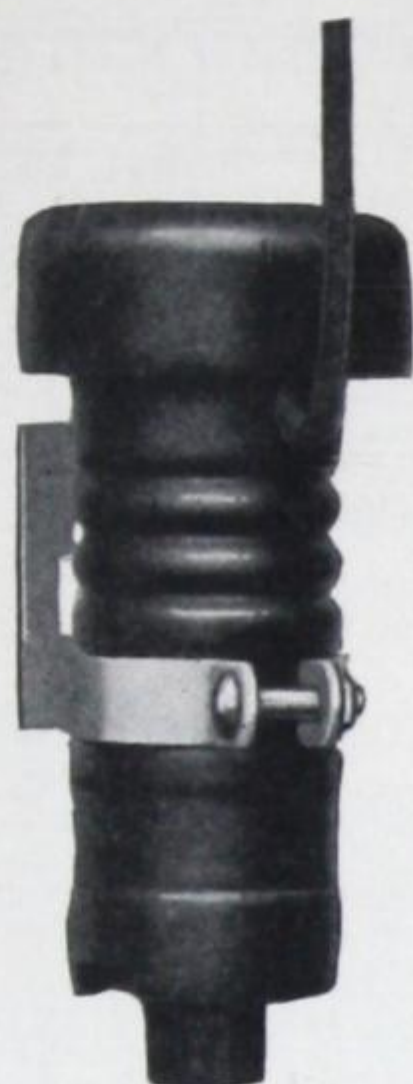


Fig. 1
Pellet arrester

thus assuring continuity of valuable lighting service.

Lightning voltages may greatly exceed the insulation strength of apparatus and bushing strength, resulting in damage to the transformer or flashover of the bushings, a cause of excessive fuse blowing. To obtain freedom from such troubles economically, the apparatus, rather than the lines or circuits, must be protected. Consequently, arresters should be installed close to the apparatus terminals.

Pellet arresters give to lighting circuits practical immunity from lightning disturbances. Their

electrical characteristics, physical design, and low cost make them exceptionally suitable for this type of service. The arresters should be connected to low resistance grounds to obtain the efficient protection of which the pellet arrester is capable. A full discussion of the subject "GROUNDS" is given in Bulletin GEA-145.

Pellet arresters are single-pole, for outdoor use on both the constant potential side and the load side of constant-current transformers. Each design has a minimum and a maximum voltage rating and under no circumstances should it be applied to a circuit the voltage of which can exceed the arrester's maximum nongrounded neutral rating as shown in the table. Where selection of arresters for the protection of the load side of the transformer is to be made, the arresters should never be applied to a transformer of a larger kilowatt rating than shown in the table.

Lightning arresters installed in the secondary of indoor station-type transformers should be located outdoors at a point nearest to the station where the circuit changes from underground to overhead. Circuits entirely underground require no lightning protection, but lightning arresters are often used to protect against line surges.

The pellet arresters consist essentially of a gap in series with a column of pellets of lead-peroxide securely sealed in a wet-process porcelain container. These arresters have an exceptionally good protective characteristic, holding the surge voltage, during discharge, to approximately one and one-half times the arrester's crest rating. The pellet column forms the valve element preventing the flow of system current following discharge, while the series gap isolates the valve element from the line until it is sparked over by a surge. A more complete description is contained in Bulletin GEA-93.

FOR PROTECTION OF PRIMARY SIDE OF TRANSFORMERS (Pellet Arresters —Outdoor Service Only)						FOR PROTECTION OF LOAD SIDE OF TRANSFORMERS (Pellet Arresters—Outdoor Service Only)					
CIRCUIT VOLTAGE	No. of Arresters Required at In- stallation	SINGLE-POLE CAT. NO. *	LIST PRICE Class GO-75	APPROX SHIP. WT in Lb	STD PKG	KW RATING OF TRANSFORMERS		SINGLE-POLE CAT. NO. *	LIST PRICE Class GO-75	APPX SHIP. WT in Lb Each in Std Pkg	STD PKG
						6.6 or 7.5 Amp Secondary	20-amp Secondary				
WHERE TRANSFORMER IS CONNECTED TO A SYSTEM, THE NEUTRAL OF WHICH IS NOT GROUNDED						1, 2, 3 5, 7.5, 10, 15	1, 2, 3, 5, 7.5, 10 15, 20, 25, 30, 35, 40, 50	†2906822G2 9LA10A2 9LA10A3	\$6.00 14.00 17.00	4 11 13	24 12 12
1000-3000	2	9LA10A2	\$14.00	11	12			9LA10A4	26.00	18	12
3000-6000	2	9LA10A4	26.00	18	12			9LA10A5	34.00	30	6
6000-9000	2	9LA10A5	34.00	30	6						
WHERE TRANSFORMER IS CONNECTED TO A SYSTEM WITH A SOLIDLY AND DEAD GROUNDED NEUTRAL						20, 25, 30 35, 40 50 60, 70	60, 70	9LA10A4 9LA10A5 9LA10A6 9LA10A7	26.00 34.00 46.00 60.00	18 30 37 40	12 6 6 6
3000-5000	†	9LA10A2	\$14.00	11	12						
5000-9000	†	9LA10A4	26.00	18	12						

* Only for installations at altitudes below 6000 ft. For altitudes above 6000 ft., obtain special recommendations.

† Compression-chamber type.

‡ Where transformer is connected between an outside wire and neutral, use one pellet arrester on outside wire. Use also on neutral wire a neutral arrester, Cat. No. 9LA11A1, (\$5.50 list each, Class GO-75, ship. wt 4 lb, std pkg 12) or Cat. No. 146187 (\$3.50 list each, Class GO-75, ship. wt 1.3 lb, std pkg 24) if voltage to ground is not over 300 volts; if, because of unbalancing, voltage is between 300 and 750 volts, use Cat. No. 9LA10A1 (\$6.00 list each, Class GO-75, ship. wt 10 lb, std pkg 12). Use two arresters at an installation made between outside wires.

PROTECTIVE DEVICES

For Constant-current Transformers

TYPES RO AND ROC (POLE AND SUBWAY TYPE)

PRIMARY FUSE CUTOUTS, FUSES, AND SERIES CIRCUIT PROTECTIVE DEVICES

CUTOUT RECOMMENDATIONS (Minimum based on ability to switch on and off load)*

For pole-type service on 1- to 15-kw transformers, use Cat. No. 6X2433 cutouts.

For pole-type service on 20- to 30-kw transformers, use either Cat. No. 6X242 or 9F2A2.

For subway-type service on 1- to 20-kw transformers, use Cat. No. 9F2A6 cutouts.

For subway-type service on 30- to 50-kw transformers, use Cat. No. 9F2A7 cutouts.

* NOTE.—The General Electric Company does not recommend the sizes of fuse links for a particular application, because of many operating requirements.

To assist in the proper selection, the table listing constant-current transformers gives full-load current under normal conditions. It should be borne in mind that the inrush current will be from two to three times the normal full-load current for a period of a few cycles.

The G-E oil fuse cutouts, D&W type, are recommended for indoor installations.

DESCRIPTION	CAT. NO.	LIST PRICE EACH Class GO-70	CAR-TON	APPROX SHIP. WT CAR-TON in Lb	DESCRIPTION	CAT. NO.	LIST PRICE Including Oil and Boxing Each Class GO-71	CAR-TON	APPROX SHIP. WT CAR-TON in Lb
(POLE-TYPE) EXPULSION-TYPE PRIMARY CUTOUTS					(POLE-TYPE) G-E OIL FUSE CUTOUTS D&W TYPE				
Single-pole expulsion-type primary cutout, 60 amp, 5000 grounded Y volts, complete with fuse holder, but less fuses (Fig. 1).....	6X2433	\$11.30	1	8	Pole-type D&W oil fuse cutout, 100 amp, 2500 volts, complete less fuses.....	9F2A2	\$58.00	1	71
Interrupting capacity 1200 amperes					Interrupting capacity 4000/5000 amperes (Fig. 2)				
Fuse holder for Cat. No. 6X243 or 6X2433.....	9F4A3	3.00	1	1	Fuses for use in Cat. No. 9F2A2 D&W cutouts:				
Single-pole expulsion-type primary cutout, 60-amp, 7500-volt, complete with fuse holder, but less fuses (Fig. 1).....	6X242	15.80	1	13	25 amp rated capacity.....	295554	1.25	10	2
Interrupting capacity 1200 amperes					30 amp rated capacity.....	295555	1.25	10	2
Fuse holder for Cat. No. 6X242.....	9F4A2	3.00	1	1	40 amp rated capacity.....	295556	1.25	10	2
†Fuses for use in Cat. Nos. 6X243, 6X2433, and 6X242:					50 amp rated capacity.....	295557	1.25	10	2
1 amp rated capacity.....	9F1C16	.50	25	2 1/2	60 amp rated capacity.....	295558	1.25	10	2
2 amp rated capacity.....	9F1C17	.50	25	2 1/2	75 amp rated capacity.....	295559	1.25	10	2
3 amp rated capacity.....	9F1C18	.50	25	2 1/2	100 amp rated capacity.....	295560	1.25	10	2
5 amp rated capacity.....	9F1C19	.50	25	2 1/2	(SUBWAY-TYPE) G-E OIL FUSE CUTOUTS D&W TYPE				
10 amp rated capacity.....	9F1C21	.50	25	2 1/2	Subway-type D-10-E D&W oil fuse cutout, 5 to 50 amperes, 2500 volts, complete less fuses.....	9F2A6	\$65.00	1	67
15 amp rated capacity.....	9F1C22	.50	25	2 1/2	Interrupting capacity 2000 amperes (Fig. 3)				
20 amp rated capacity.....	9F1C23	.50	25	2 1/2	Fuses for use in Cat. No. 9F2A6 cutouts:				
25 amp rated capacity.....	9F1C24	.50	25	3 1/2	5 amp rated capacity.....	295544	1.25	10	1
30 amp rated capacity.....	9F1C25	.50	25	3 1/2	10 amp rated capacity.....	295545	1.25	10	1
40 amp rated capacity.....	9F1C26	.50	25	4 1/2	15 amp rated capacity.....	295546	1.25	10	1
45 amp rated capacity.....	9F1C27	.50	25	4 1/2	20 amp rated capacity.....	295547	1.25	10	1
50 amp rated capacity.....	9F1C28	.50	25	7	25 amp rated capacity.....	295548	1.25	10	1
					30 amp rated capacity.....	295549	1.25	10	1
					40 amp rated capacity.....	295550	1.25	10	1
					50 amp rated capacity.....	295551	1.25	10	1
					Subway-type D&W oil fuse cutout, 5 to 100 amperes, 2500 volts, complete less fuses.....	9F2A7	77.00	1	79
					Interrupting capacity 4000/5000 amperes (Fig. 4)				
					Fuses for use in Cat. No. 9F2A7 cutouts:				
					30 amp rated capacity.....	295555	1.25	10	2
					40 amp rated capacity.....	295556	1.25	10	2
					50 amp rated capacity.....	295557	1.25	10	2
					60 amp rated capacity.....	295558	1.25	10	2
					75 amp rated capacity.....	295559	1.25	10	2
					100 amp rated capacity.....	295560	1.25	10	2

† All of these fuse links have a letter "N" on the button head cap and on the carton label to indicate that the rating is given on the 100 per cent continuous basis.

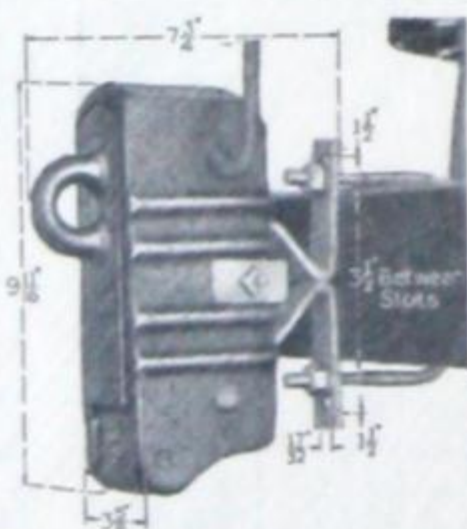


Fig. 1
Expulsion-type
primary cutout

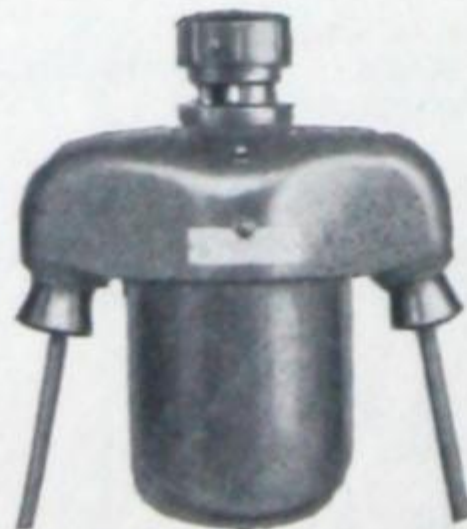


Fig. 2
G-E oil fuse cutout,
D&W type for pole
or wall mounting



Fig. 3
G-E oil fuse cutout,
D&W type for pole
service



Fig. 4
G-E oil fuse cutout
D&W type for
subway service

ADVANTAGES

1. Provides a means for absolute disconnection of primary of transformers at the terminals.
2. Gives protection to feeder circuit and transformers.
3. Fuses easily renewed.

NOVALUX PROTECTOR

FOR USE WITH TYPE RO TRANSFORMERS AND NOVALUX CONTROLLER

APPLICATION

Open circuits in series street-lighting systems are unavoidable, especially on aerial circuits, and it is very desirable from the standpoint of "safety first," that when an open circuit does occur, the primary of the main transformer be de-energized. This NOVALUX PROTECTOR has been developed to operate in conjunction with a CR7841 Novalux controller, and its function is to open up the controller as soon as an open circuit takes place.

CHARACTERISTICS AND DESCRIPTION

The mechanism of the Novalux protector consists of two relay contactors with armatures connected together through a horizontal dashpot. One of the relays is energized by the controlling circuit, the other by the load circuit to be protected. Under normal operating conditions, the contacts of the series control type are open, and the contacts on the multiple control type are closed. When an

"open" occurs in the load circuit, the relay in the load circuit becomes de-energized, and the control relay contacts are closed on the series type (opened on the multiple type) thus de-energizing the operating coil of the controller. This allows the controller contacts to open, de-energizing the primary of the constant-current transformer.

After the "open" in the load circuit has been repaired, the protector can be reset (reconnecting the transformer to the main system) by means of a push rod conveniently located at the top of the protector.

The protector is housed in a cast-iron casing. The working parts are submersed in oil for insulating and damping purposes.

The multiple controlled protector can be reset electrically after the line has been repaired, by connecting as shown on connection diagram, Fig. 5. This arrangement permits resetting without climbing the pole.



Fig. 1
(Photograph 720268)
G-E Novalux protector

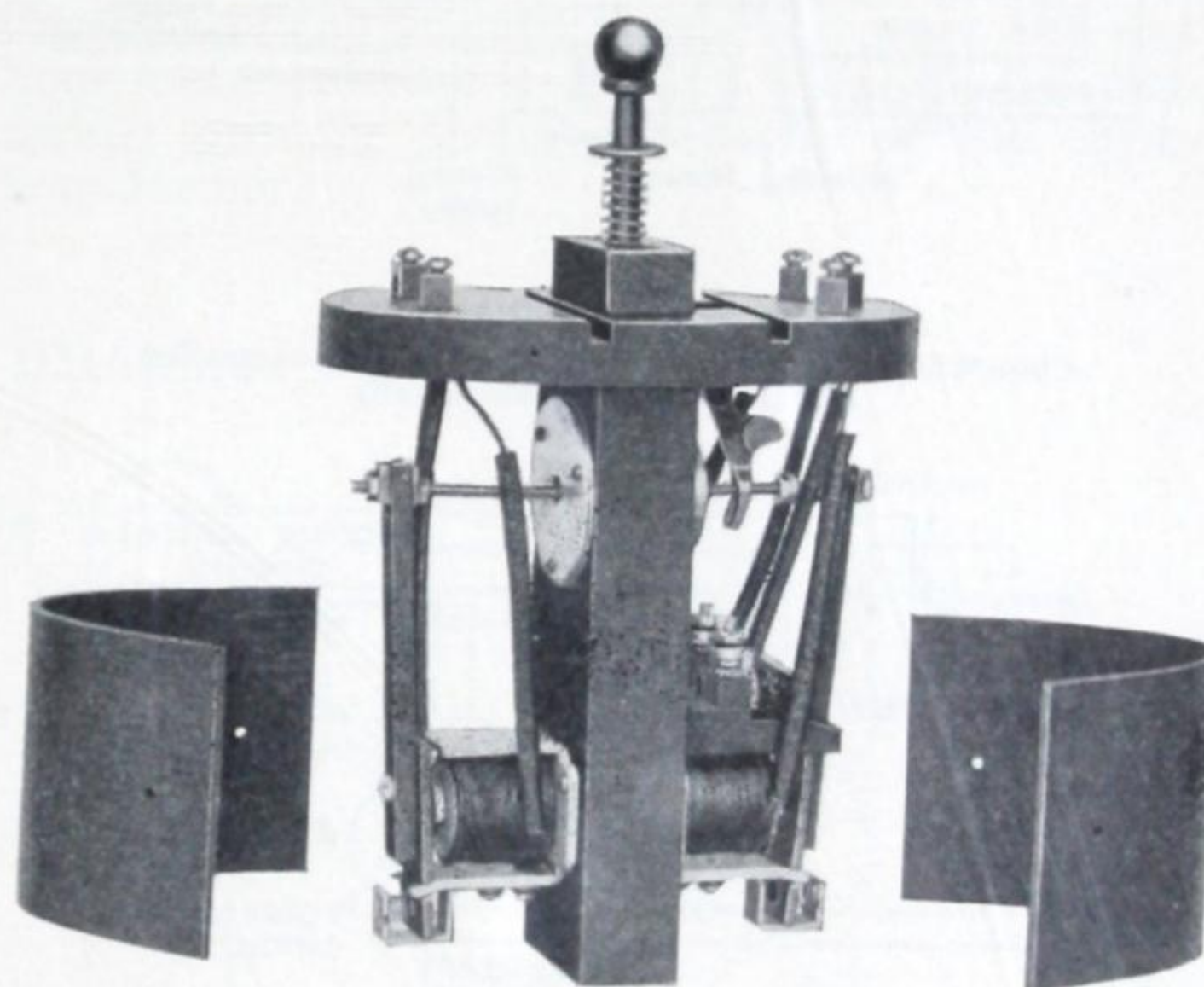


Fig. 2
(Photograph 720270)
G-E Novalux protector—without tank, insulation barriers removed

COIL RATINGS			CAT. NO.	LIST PRICE Class GO-51	SHIP. WT in Lb Less Oil	Quarts No. 10-C Oil Included in Price
Control Circuit	Protected Circuit	Type of Control Circuit				
6.6	6.6	Series	3045291	\$132.00	60	4
6.6	7.5	Series	3045292	132.00	60	4
7.5	7.5	Series	3045293	132.00	60	4
7.5	6.6	Series	3045294	132.00	60	4
110 volts	6.6	Multiple	3045295	132.00	60	4
110 volts	7.5	Multiple	3045296	132.00	60	4

Protectors are usually bolted directly to crossarm but can be supplied with hanger hooks if desired. Add \$9.30 to list price for hanger hooks.

NOVALUX PROTECTOR

FOR USE WITH TYPE RO TRANSFORMERS AND NOVALUX CONTROLLER

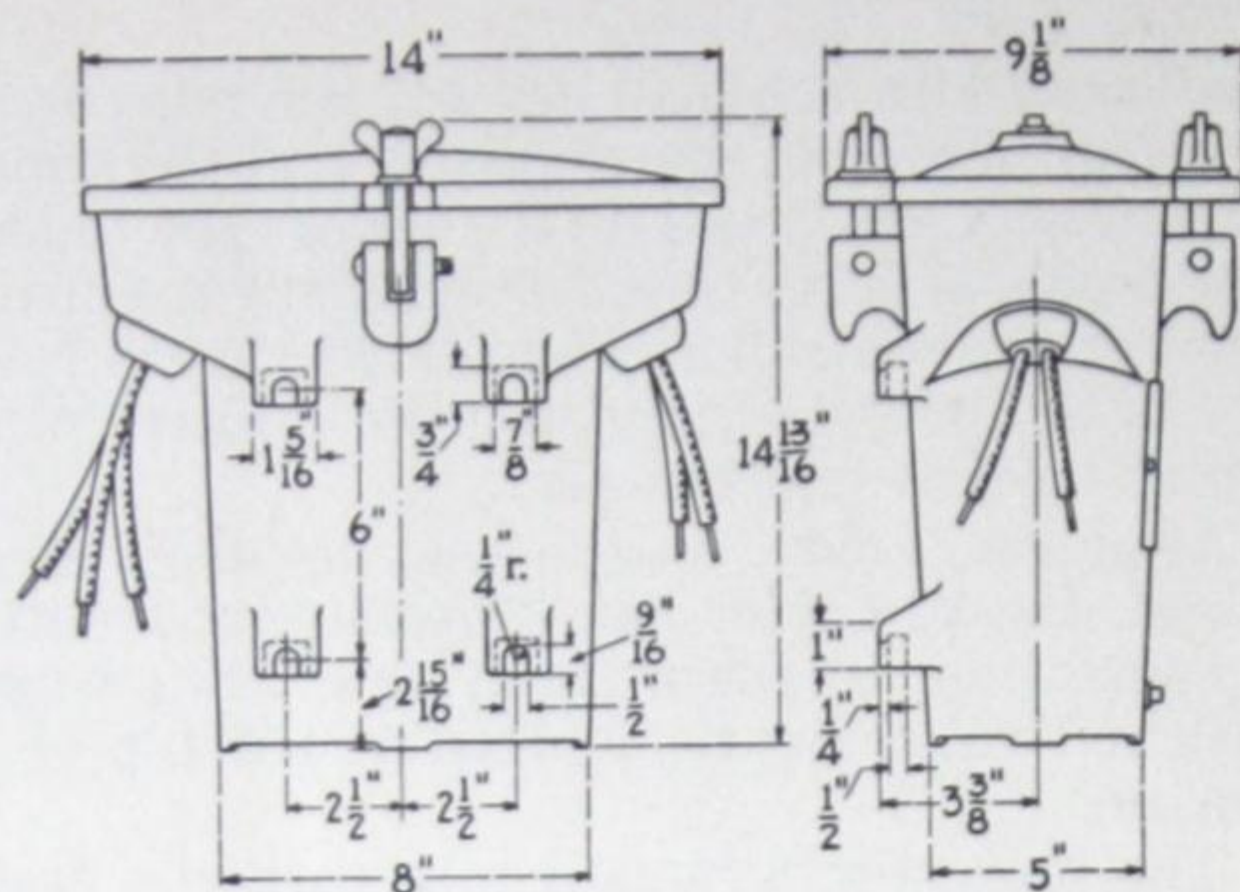


Fig. 3
(Drawing K-4802706)
Dimensions of Novalux protectors

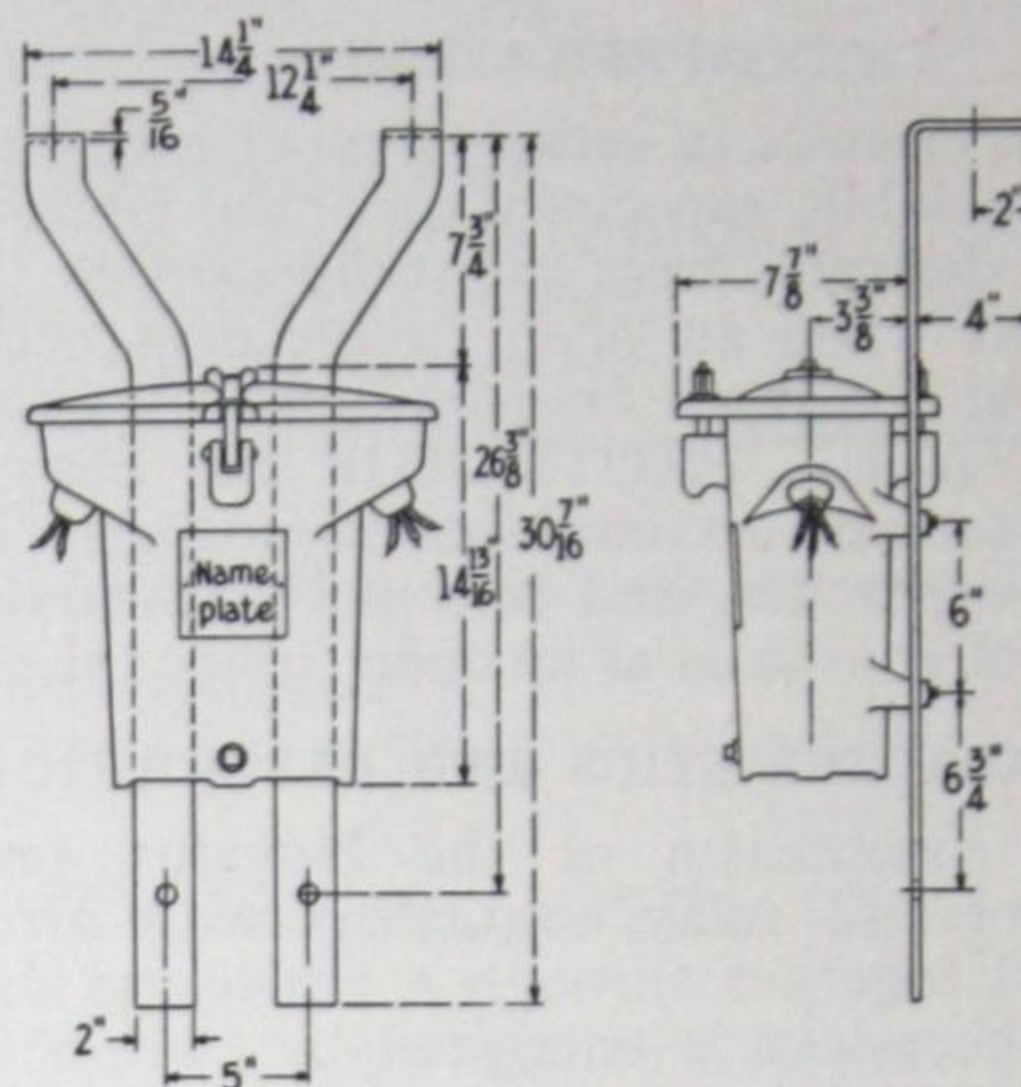


Fig. 4
(Drawing K-4867331)
Dimensions of Novalux protector and hanger hooks

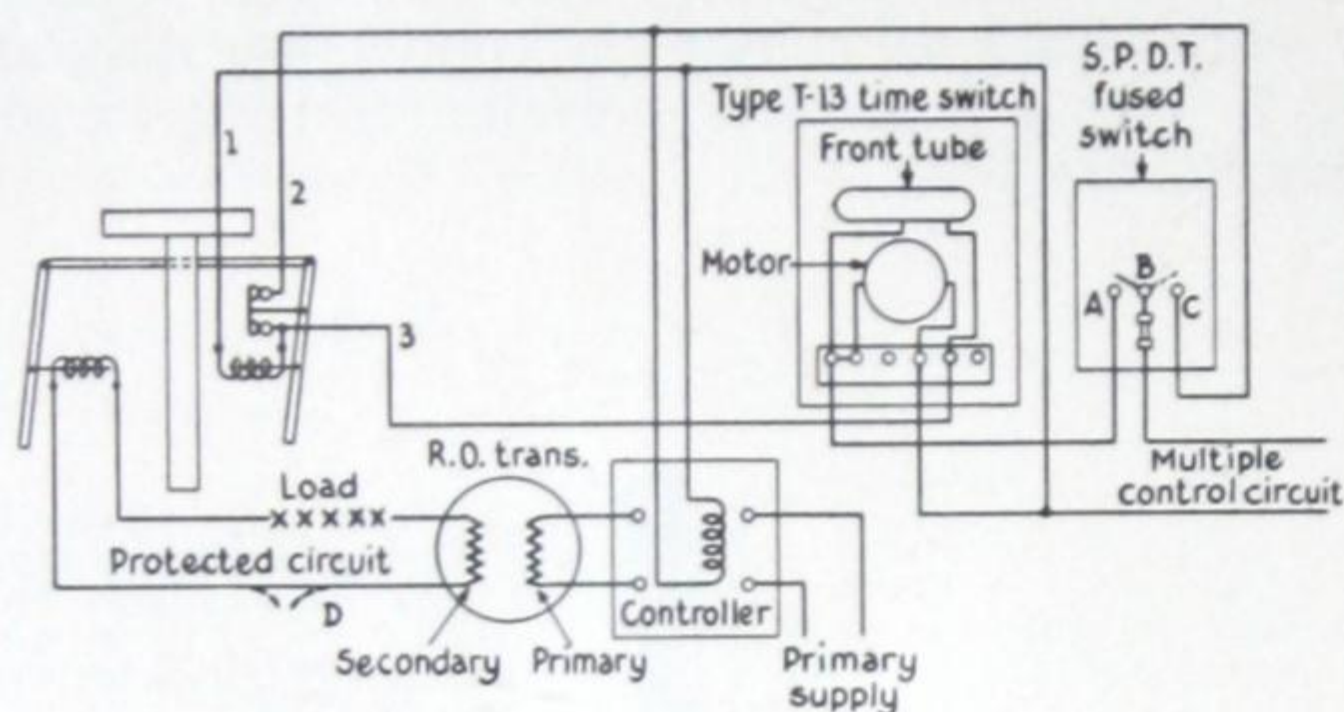
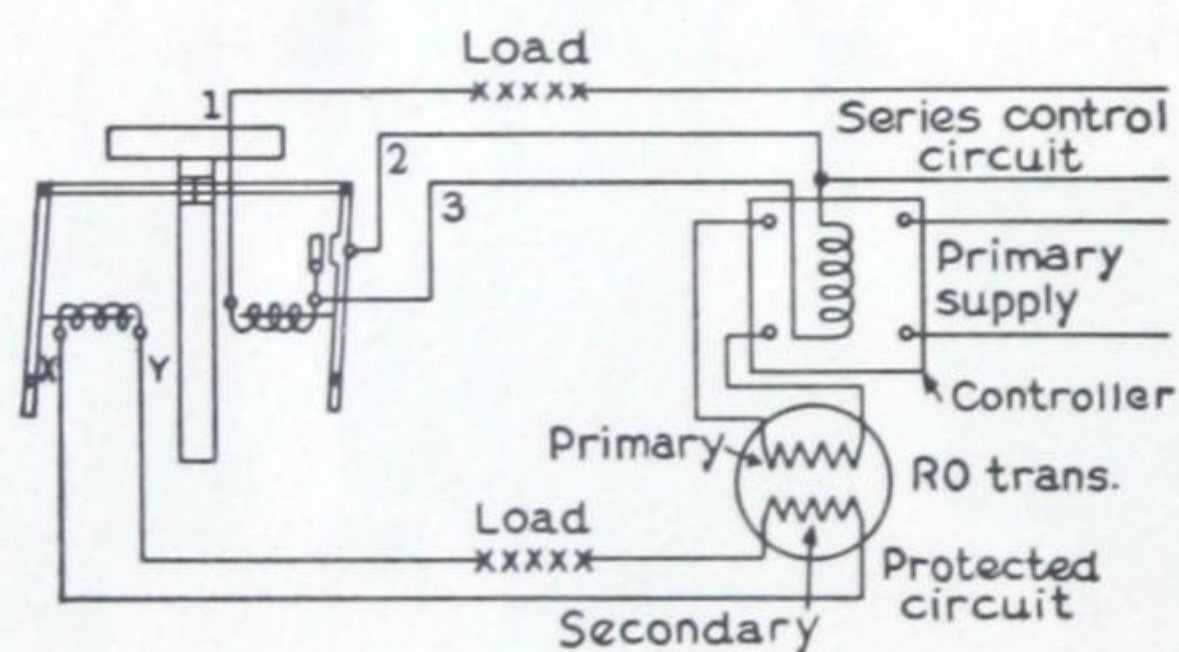
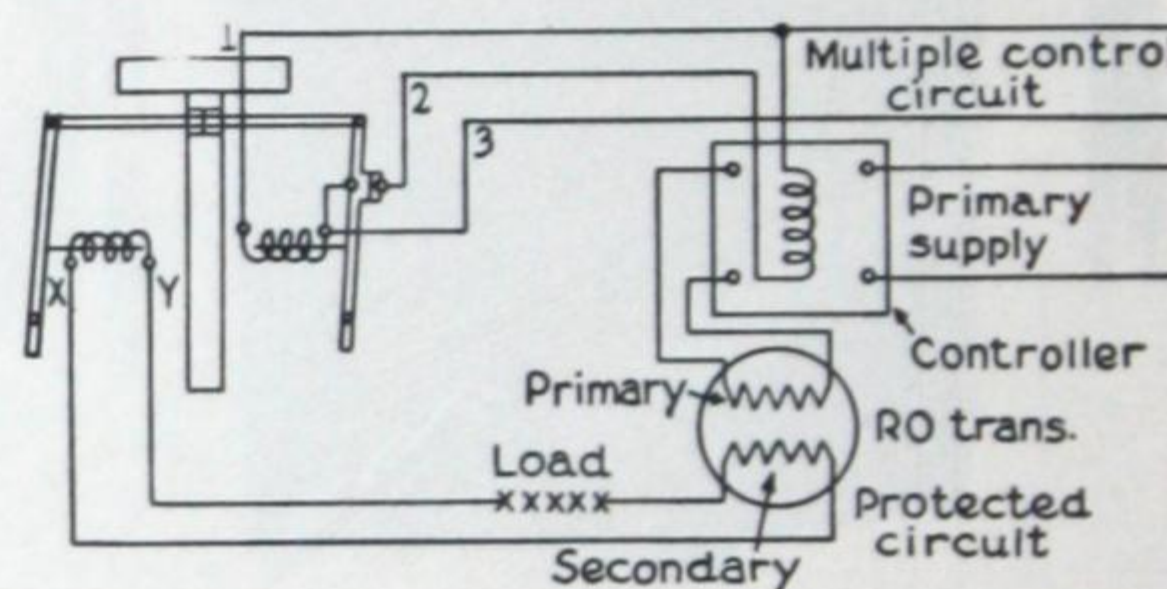


Fig. 5
(Drawing K-4867351)
Connection diagram for resetting a multiple-controlled Novalux protector electrically



(a) Series controller coil
Fig. 6



(b) Multiple controller coil
Fig. 7

Connections of Novalux protectors

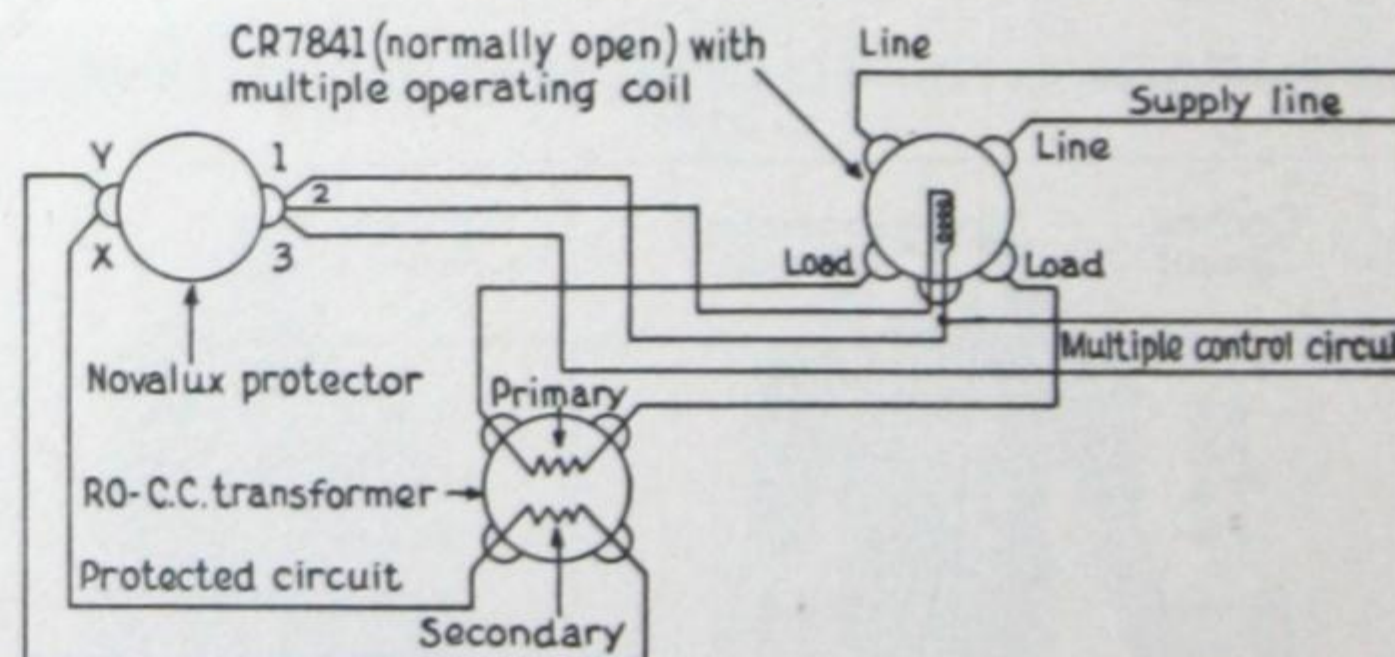
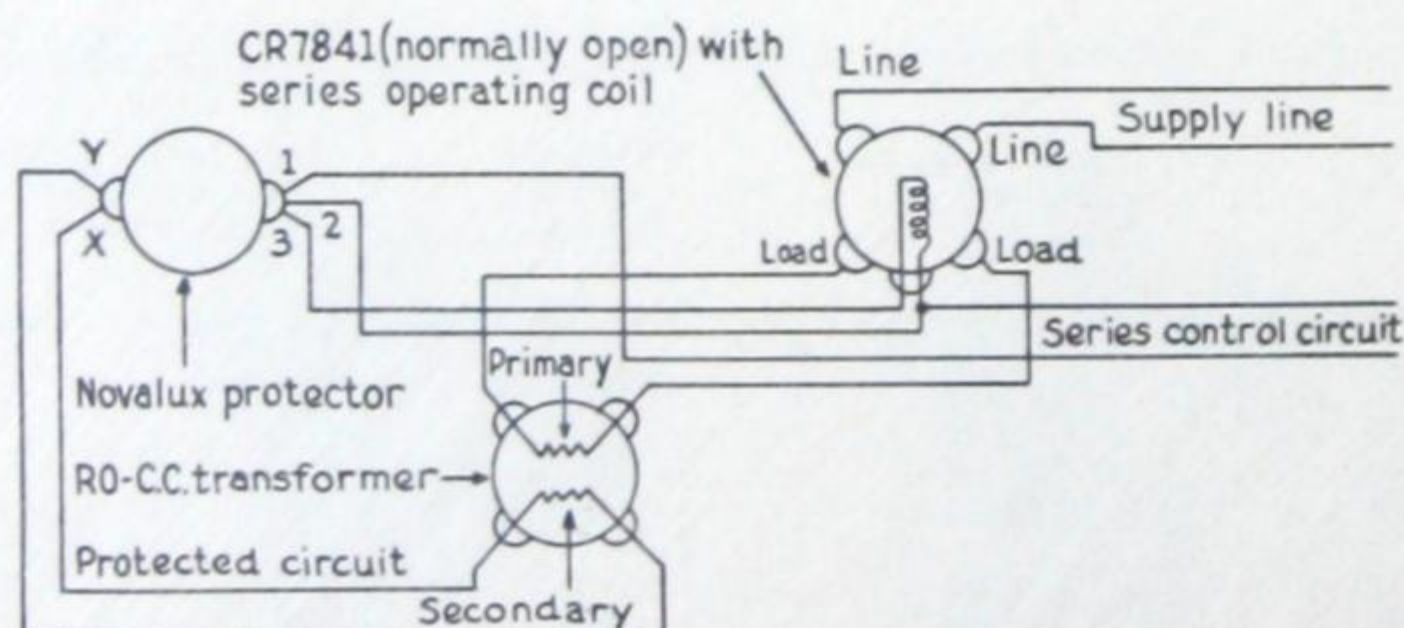


Fig. 8
(Drawing K-1050069)

Connections for Novalux protector, Novalux controller, and RO transformer

NOTE.—Novalux controller, CR7841 (normally open) or similar device is required with all Novalux protector installations.

NOVALUX CONSTANT-CURRENT TRANSFORMER CONTROL

Station Type RV-2

PLUG SWITCH PANELS

The panels listed are designed for the control of one single-circuit secondary or multicircuit secondary constant-current transformer and either one or two lamp circuits per transformer. The lamp circuits may be either arc or incandescent. All panels are rated on the basis of transformer kilowatt output at unity power-factor. They are designed for separate installation near the transformers which they are to control and are not suitable for assembly in a switchboard.

INSTRUMENT EQUIPMENT

The ammeters are connected in series with the secondary circuits through current transformers, thereby insulating the instrument from the high-voltage circuit and eliminating the need for an insulating cover.

WATTHOUR-METER EQUIPMENT

Standard subbases equipped with a watthour meter and necessary current and potential transformers are listed for all panels. The watthour meters are for the purpose of recording the total input of energy to the constant-current transformers, and central-station managers will appreciate the advantages of this equipment as providing

a means of accurately determining the cost of energy for the lighting system.

SWITCH EQUIPMENT

The primary switches consist of General Electric Company's standard plug switch and enclosed fuse combined in a single unit. The fuses are of such capacity as to rupture the circuit only under emergency conditions equivalent to a short circuit on the transformer.

Open-circuiting secondary plug switches are provided on all panels for the purpose of disconnecting the line from the secondary of the transformer when testing for ground or open circuit.

Short-circuiting secondary plug switches are included in the equipment of panels for one transformer and two lamp circuits only and permit the operation of one lamp circuit when the other is shut down.

VOLTAGE

If so specified in the order, any panel will be furnished for 1150 volts, the changes being in the capacity of the primary fuses, and when the watthour meter subbase is used, in the potential transformer primary and the capacity of the current transformer.

CONNECTION DIAGRAMS

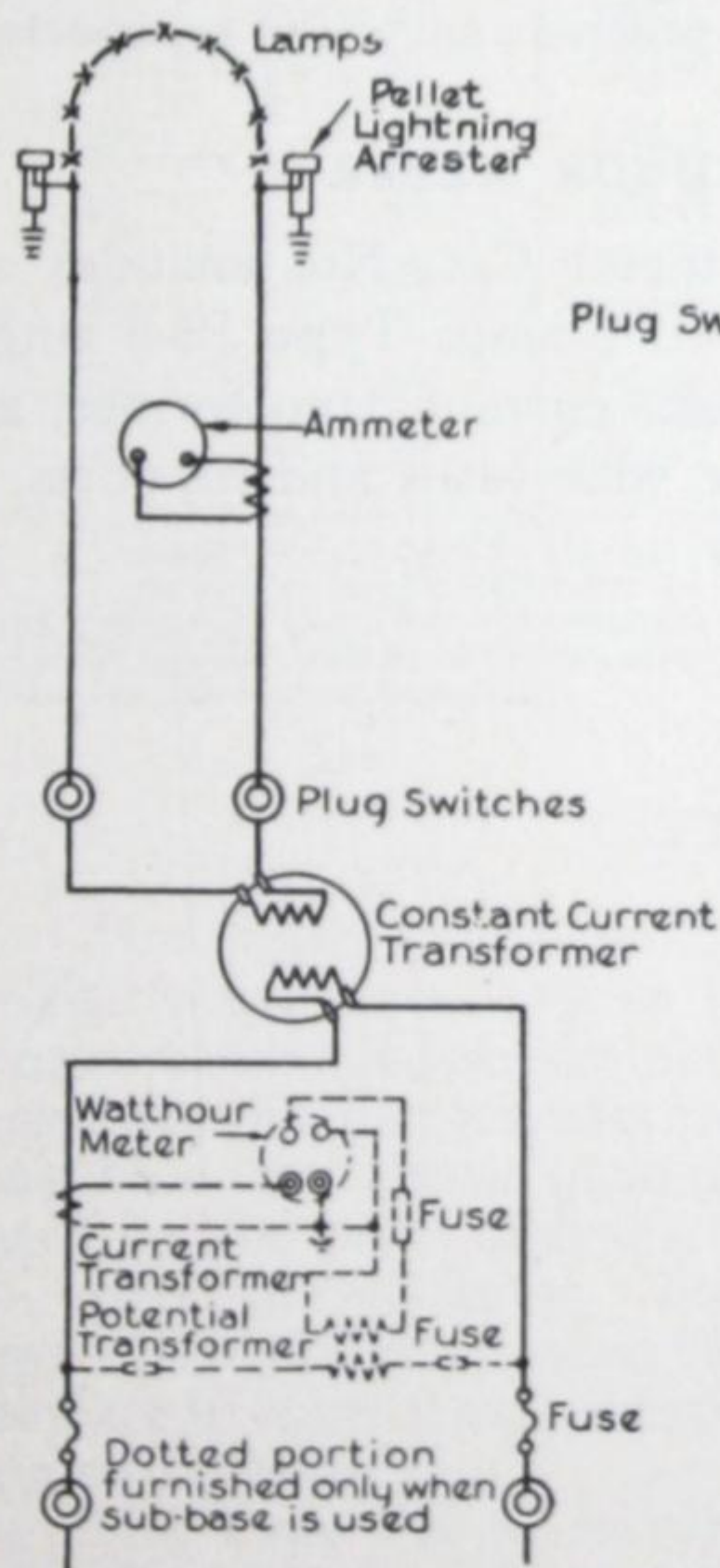


Fig. 1

One arc- or incandescent-lamp circuit from one transformer with single-circuit secondary

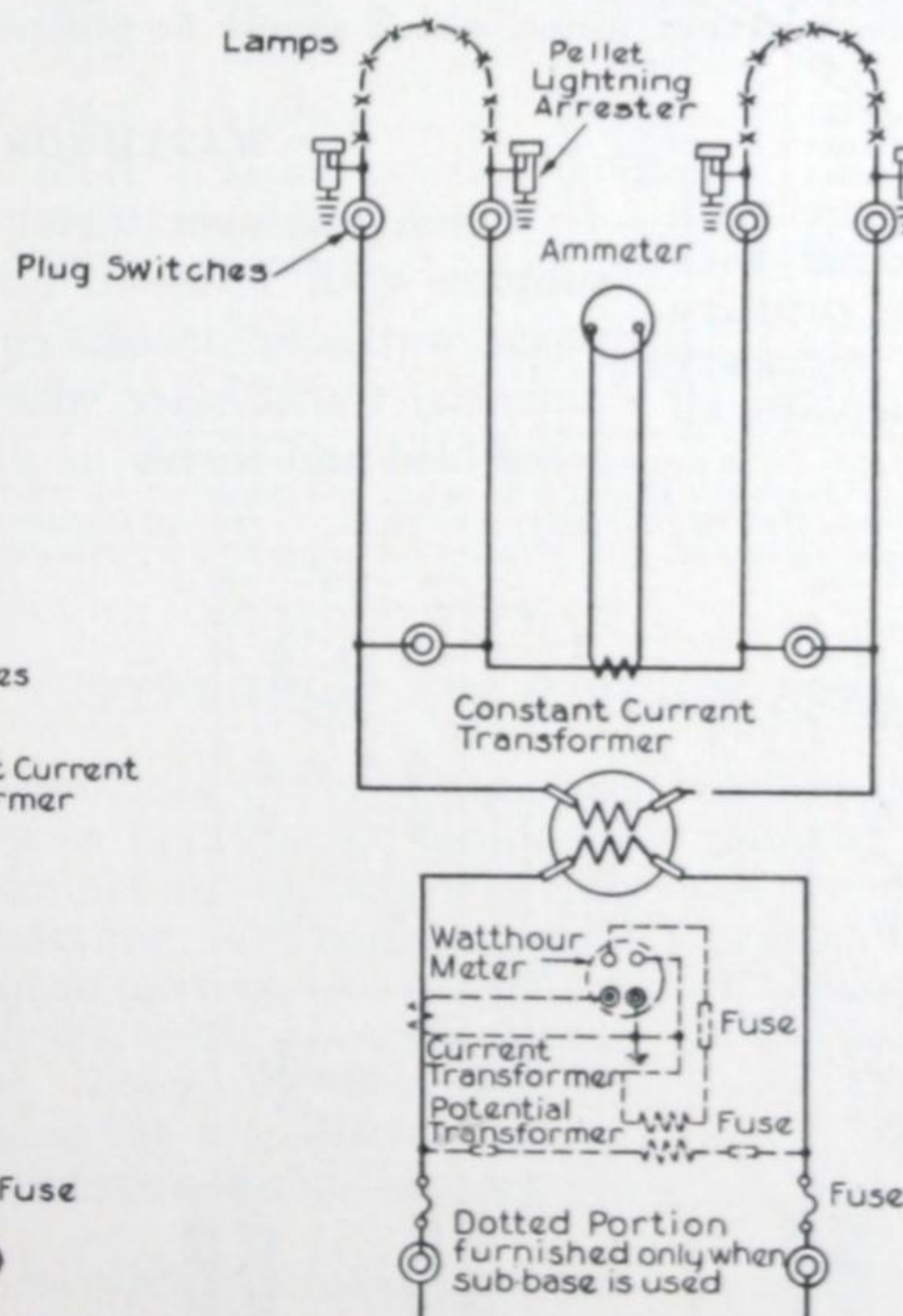


Fig. 2

Two arc- or incandescent-lamp circuits from one transformer with single-circuit secondary

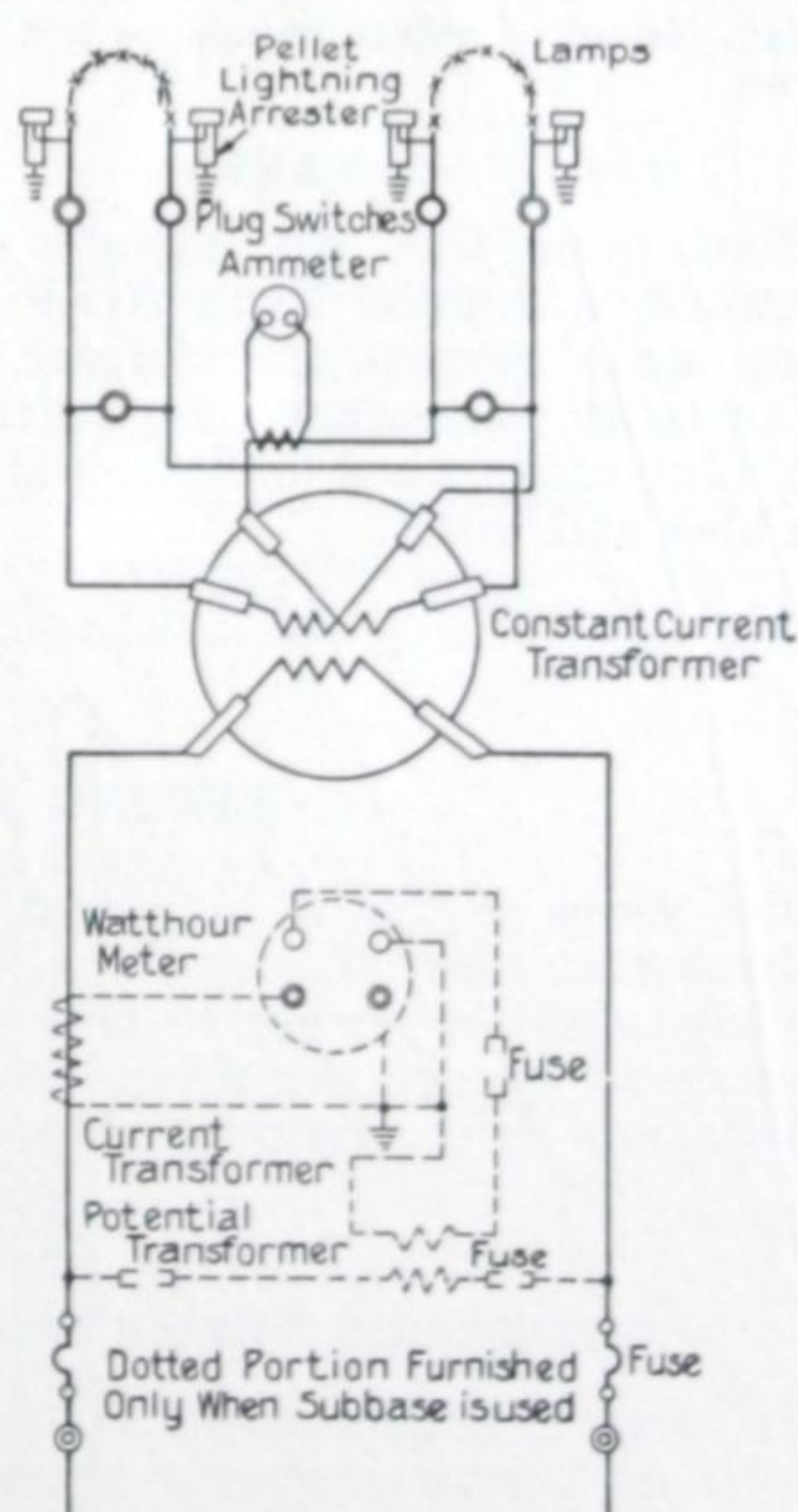


Fig. 3

Two arc- or incandescent-lamp circuits from one transformer with multicircuit secondary

NOVALUX CONSTANT-CURRENT TRANSFORMER CONTROL

Station Type RV-2

6.6 or 7.5 Amperes—Secondary Current

FREQUENCY

Unless otherwise ordered, all apparatus will be calibrated for 60 cycles. Main panels will be furnished for any frequency from 25 to 140 cycles without additional charge, but when a watthour-meter subbase is used on frequencies less than 60 cycles, the price will be increased.

MATERIAL, FRAMEWORK, AND FINISH

The panels and subbase are asbestos-ebony, $1\frac{1}{2}$ in. thick with $\frac{1}{4}$ -in. bevel, and are mounted

on a self-supporting framework and supporting framework 64 in. high. Blue Vermont marble may be substituted for asbestos-ebony at a slight increase in price.

Instruments and meters have the General Electric Company's standard dull-black finish.

LIGHTNING ARRESTERS

Lightning arresters are recommended for each lamp circuit. They are not included with these panels and must be ordered separately. See page 235 for detailed recommendations.

PLUG SWITCH PANEL DATA

2300 Volts

NORMAL KW RATING (See Lamp Capacity Table, page 224)	AMPERE CAPACITIES		Panels for ONE Transformer and One or Two Lamp Circuits						
	Lamp Circuit	Primary Fuses (Main Panel)	CURRENT TRANSFORMER CAPACITY in Amp (Watthour Meters Subbase)	PANELS FOR ONE LAMP CIRCUIT			* PANELS FOR TWO LAMP CIRCUITS		
				Fig. No.	Main Panel Cat. No.	Watthour Meter Subbase Cat. No.	Fig. No.	Main Panel Cat. No.	Watthour Meter Subbase Cat. No.
5	6.6, 7.5	4.0	10	4	2X518	2X538	5	2X528	2X548
10	6.6, 7.5	6.0	20	4	2X519	2X539	5	2X529	2X549
15	6.6, 7.5	10.0	30	4	2X520	2X540	5	2X530	2X550
20	6.6, 7.5	12.0	40	4	2X521	2X541	5	2X531	2X551
25	6.6, 7.5	15.0	50	4	2X522	2X542	5	2X532	2X552
30	6.6, 7.5	20.0	60	4	2X523	2X543	5	2X533	2X553
40	6.6, 7.5	25.0	80	4	2X524	2X544	5	2X534	2X554
50	6.6, 7.5	30.0	80	4	2X525	2X545	5	2X535	2X555
60	6.6, 7.5	40.0	100	4	2X526	2X546	5	2X536	2X556
70	6.6, 7.5	40.0	125	4	2X527	2X547	5	2X537	2X557

* Two-circuit panels up to and including 30 kw are for transformers with single-circuit secondaries. Above 30 kw the panels are arranged for transformers with multicircuit secondaries. Refer to connection diagrams, page 242

Cat. No. of complete panels do not include watthour meter, which should be ordered and priced separately, if required.

PANEL

Each panel Cat. No. includes one panel with framework, a 5-amp, Type AD-6 ammeter with 10-amp scale, current transformer, fused primary plug switches, secondary plug switches, necessary plugs, plug racks, card holders, and nameplate, all assembled and wired.

WATTHOUR METER

Each watthour meter Cat. No. includes one subbase with 110-volt, 5-amp, Type IS-8 single-phase watthour meter, current transformer, and potential transformer with fuses and supports, all assembled and wired.

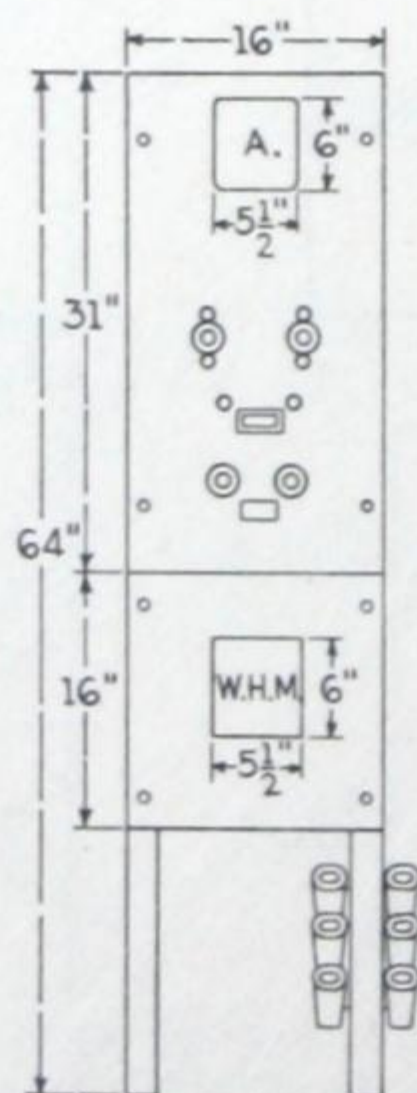


Fig. 4

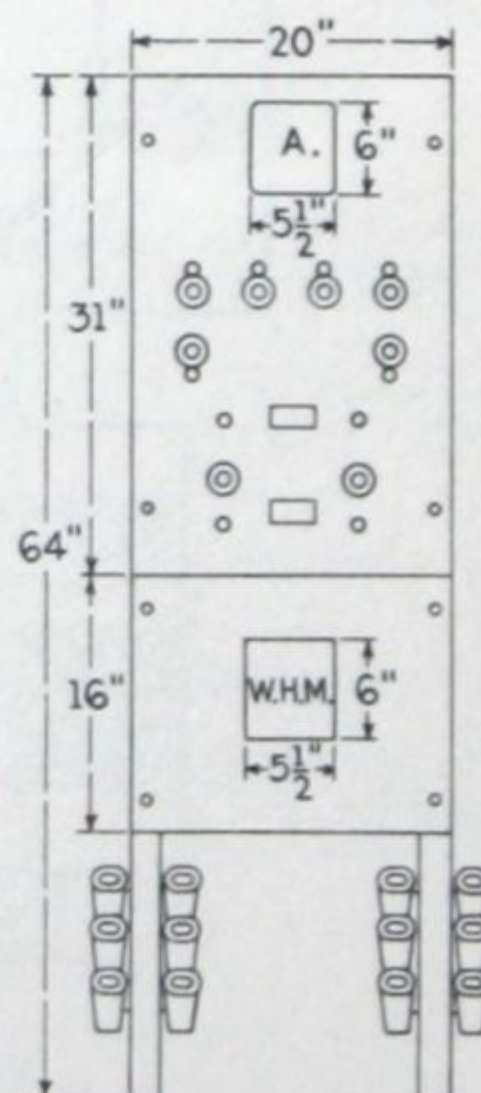


Fig. 5

NOVALUX CONSTANT-CURRENT TRANSFORMER CONTROL

Station Type RV-2

PLUG SWITCH PANELS

6.6 or 7.5 Secondary Amperes

*2300 Volts

NORMAL KW RATING (See Lamp Capacity Table, Page 224)	Panel for ONE Transformer with One Lamp Circuit			§ Panels for ONE Transformer with Two Lamp Circuits		
	CAT. NO.	LIST PRICE Class GO-51	APPROX SHIP. WT in Lb	CAT. NO.	LIST PRICE Class GO-51	APPROX SHIP. WT in Lb
5	2X518	\$415.00	210	2X528	\$575.00	280
10	2X519	415.00	210	2X529	575.00	280
15	2X520	415.00	210	2X530	575.00	280
20	2X521	415.00	210	2X531	575.00	280
25	2X522	415.00	210	2X532	575.00	280
30	2X523	500.00	210	2X533	665.00	280
40	2X524	500.00	210	2X534	665.00	280
50	2X525	500.00	220	2X535	665.00	290
60	2X526	500.00	220	2X536	665.00	290
70	2X527	500.00	220	2X537	665.00	290

* The panels listed are designed for 2300 volts, 25 to 140 cycles, and will be so furnished unless otherwise ordered. With slight modifications, the panels may be used for 1150 volts. No additional charge is made for 1150-volt panels.

§ Two-circuit panels up to and including 30 kw are for transformers with single-circuit secondaries. Above 30 kw, the panels are arranged for transformers with multicircuit secondaries. Refer to connection diagrams, page 242.

SUBBASES WITH WATTHOUR METERS—LIGHTNING ARRESTERS

NORMAL KW RATING (See Lamp Capacity Table, Page 224)	† SUBBASE WITH WATTHOUR METER							‡ PELLET ARRESTERS For Outdoor Service Only		
	AMPERE CAPACITY Current Transformer	For One-circuit Panel			For Two-circuit Panel			SINGLE-POLE CAT. NO.	LIST PRICE Class GO-75	APPROX SHIP. WT in Lb
		CAT. NO.	LIST PRICE Class GO-51	APPROX SHIP. WT in Lb	CAT. NO.	LIST PRICE Class GO-51	APPROX SHIP. WT in Lb			
5	10	2X538	\$240.00	120	2X548	\$240.00	130	9LA10A2	\$14.00	11
10	20	2X539	240.00	120	2X549	240.00	130			
15	30	2X540	240.00	120	2X550	240.00	130			
20	40	2X541	240.00	120	2X551	240.00	130	9LA10A4	26.00	18
25	50	2X542	240.00	120	2X552	240.00	130			
30	60	2X543	240.00	120	2X553	240.00	130			
35	60	2X543	240.00	120	2X553	240.00	130	9LA10A5	34.00	30
40	80	2X544	240.00	120	2X554	240.00	130			
50	80	2X545	240.00	120	2X555	240.00	130			
60	100	2X546	240.00	120	2X556	240.00	130	9LA10A6	46.00	37
70	125	2X547	240.00	120	2X557	240.00	130			
								9LA10A7	60.00	40

† Designed for 60 cycles only but can be furnished for other frequencies at a special price.

‡ Lightning arresters listed are for the protection of the load side of the constant-current transformer. When single-circuit constant-current transformers are operated with multicircuit panels, lightning arresters should be installed on each circuit, and each arrester should be selected for the total kilowatt rating of the transformer. Arresters are suitable only for installations at altitudes below 6000 ft. For altitudes above 6000 ft obtain special recommendations.

TYPE FK-41 OIL CIRCUIT BREAKER PANELS

The panels are designed for the control of one single-circuit secondary or multicircuit secondary constant-current transformer and either one or two lamp circuits per transformer. The lamp circuits may be either arc or incandescent. All panels are rated on the basis of transformer kilowatt output at unity power-factor. They are designed for separate installation near the transformers which they are to control and are not suitable for assembly in a switchboard.

The Type FK-41 oil circuit breaker does not have the undercurrent protective feature. If undercurrent protection is required, the Type FK-33 oil circuit breaker should be used. The coil of the

undercurrent device is wired in series with the ammeter and instrument current transformer on the secondary side of the constant-current transformer. This coil opens the primary breaker either on the loss of primary voltage or on an open circuit in the secondary.

INSTRUMENT EQUIPMENT

The ammeters are connected in series with the secondary circuits through current transformers, thereby insulating the instrument from the high-voltage circuit and obviating the need for an insulating cover.

NOVALUX CONSTANT-CURRENT TRANSFORMER CONTROL

Station Type RV-2

TYPE FK-41 OIL CIRCUIT BREAKER PANELS

WATTHOUR-METER EQUIPMENT

Standard watthour meters with instrument transformers are listed for all panels. No subbase is included or required.

The watthour meters are for the purpose of recording the total input of energy to the constant-current transformer. Central-station managers will appreciate the advantages of this equipment as providing a means of accurately determining the cost of energy for the lighting system.

OIL-CIRCUIT-BREAKER EQUIPMENT

The primary switches are of the Type FK-41 nonautomatic manually operated type. When they are used on the primary, fuses are furnished for overcurrent protection.

The Type FK-41 oil circuit breaker is also furnished on the secondary for the purpose of disconnecting the line from the secondary of the transformer when testing for ground or open

circuit. Short-circuiting contacts are included with the secondary switches on panels for one transformer and two lamp circuits only, permitting the operation of one lamp circuit without the other.

VOLTAGE

If so specified in the order, any panel will be furnished for 1150 volts, the changes being in the capacity of the primary fuses, and when the watthour meter is used, in the potential transformer primary and the capacity of the current transformer.

FREQUENCY

Unless otherwise ordered, all apparatus will be calibrated for 60 cycles. Main panels will be furnished for any frequency from 25 to 140 cycles without additional charge, but when a watthour meter is used on frequencies less than 60 cycles, the price will be increased.

CONNECTION DIAGRAMS

Dotted portion furnished only when ordered by corresponding Cat. No.

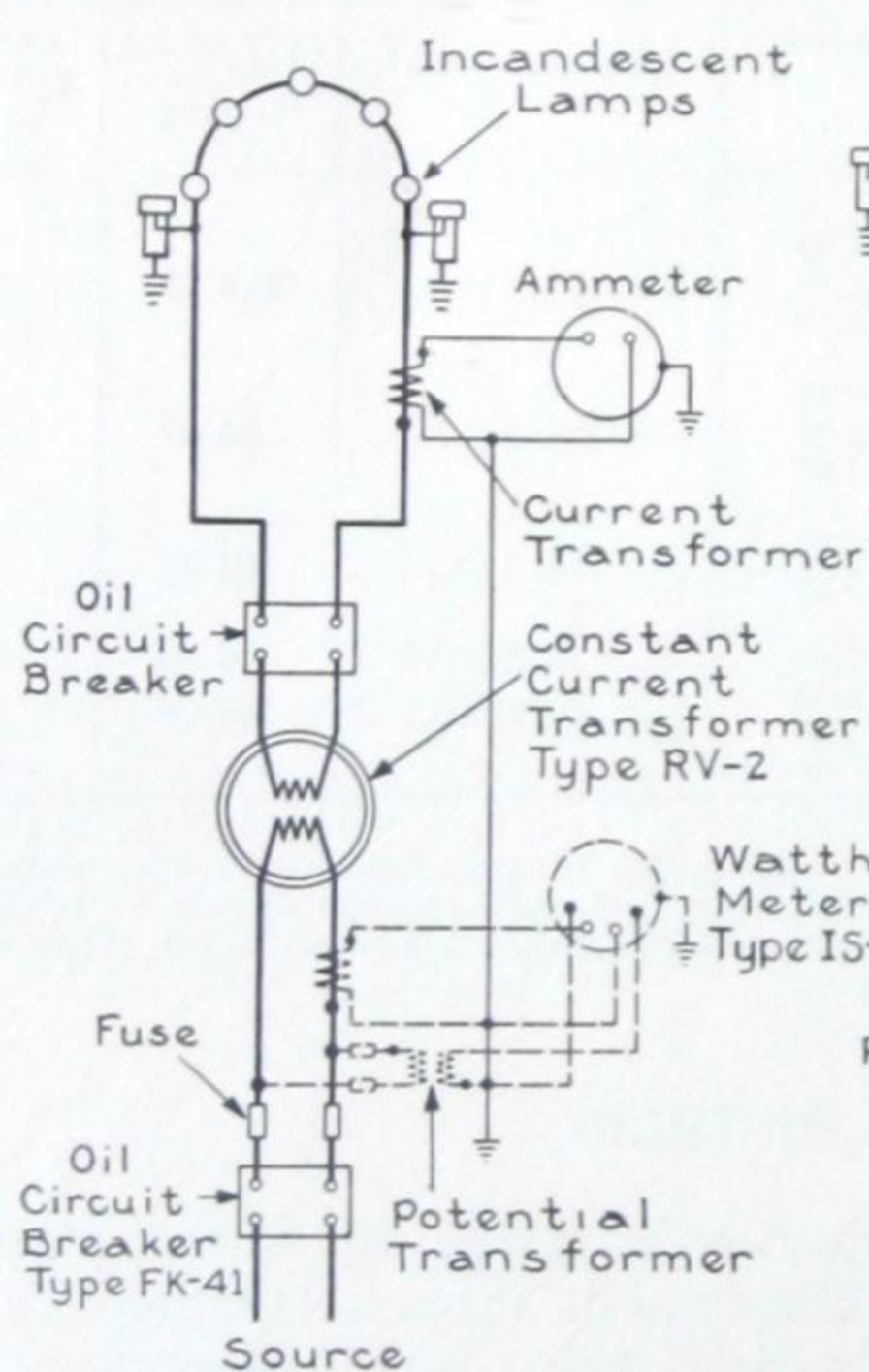


Fig. 6

One arc- or incandescent-lamp circuit from one transformer with single-circuit secondary

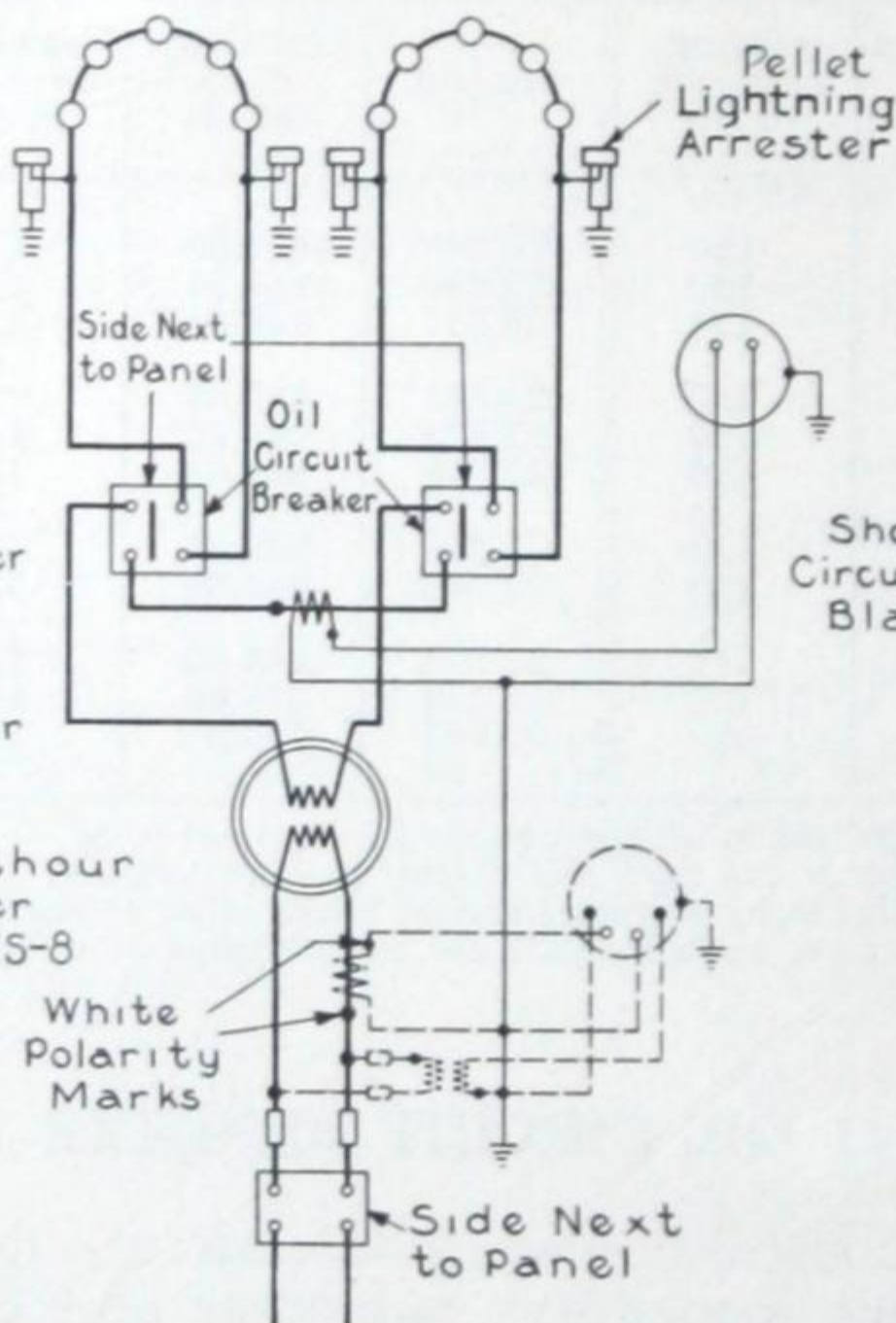


Fig. 7

Two arc- or incandescent-lamp circuits from one transformer with single-circuit secondary

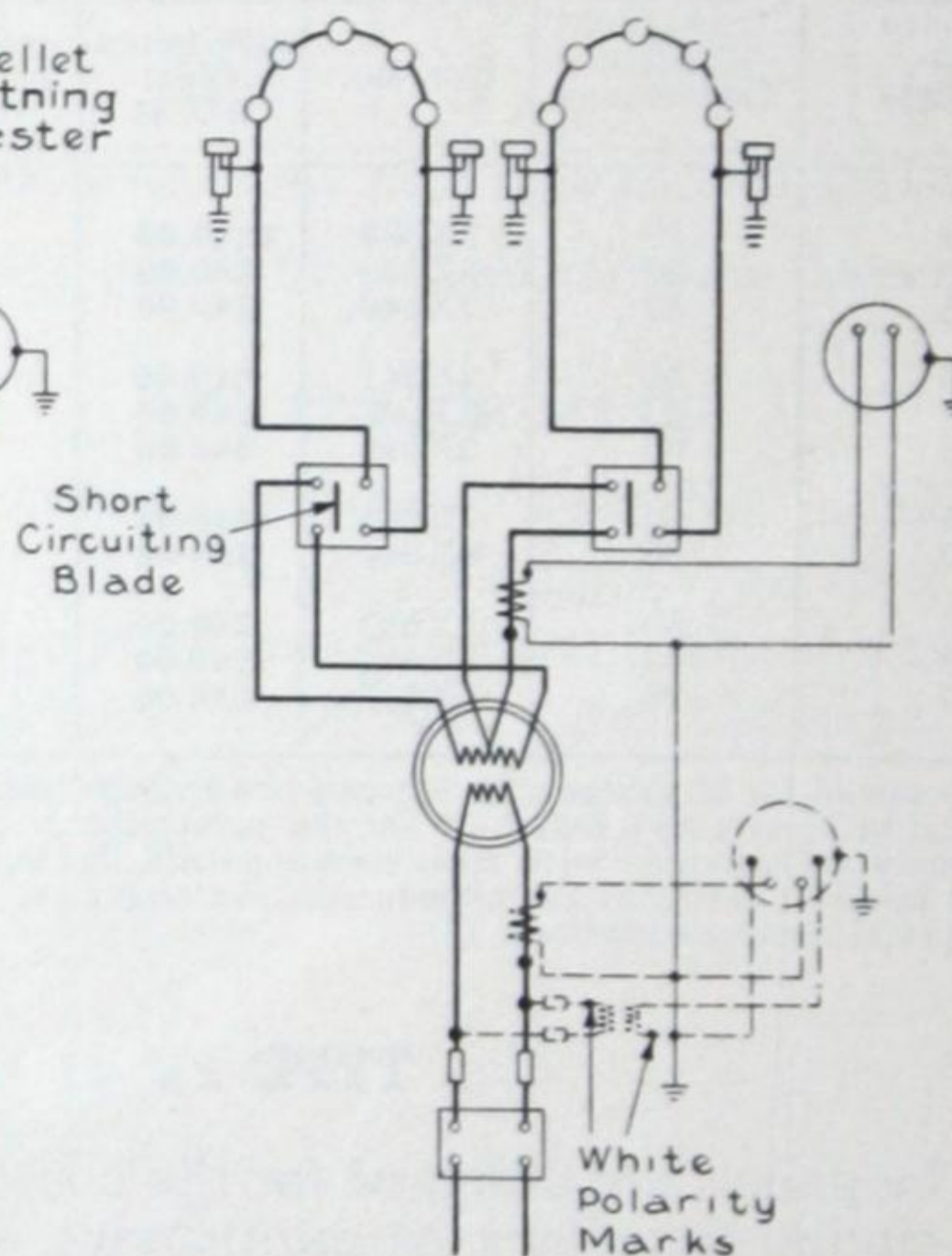


Fig. 8

Two arc- or incandescent-lamp circuits from one transformer with two-circuit secondary

NOVALUX CONSTANT-CURRENT TRANSFORMER CONTROL

Station Type RV-2

TYPE FK-41 OIL-CIRCUIT-BREAKER PANELS

6.6 or 7.5 Secondary Amperes

MATERIAL, FRAMEWORK, AND FINISH

The panels are of steel, $\frac{1}{8}$ in. thick, self-supporting, 76 in. high.

Panels, instruments, and meters have the General Electric Company's standard dull-black finish.

LIGHTNING ARRESTERS

Lightning arresters are recommended for each lamp circuit. They are not included with these panels and must be ordered separately. See page 235 for detailed recommendations.

FK-41 OIL-CIRCUIT-BREAKER PANEL DATA

2300 Volts

NORMAL KW RATING (See Lamp Capacity Table, Page 224)	AMPERE CAPACITIES		Panels for One Transformer and One or Two Lamp Circuits							Panels for Two Transformers with One Lamp Circuit per Transformer		
	Lamp Circuit	Primary Fuses (Main Panel)	CURRENT TRANSFORMER CAPACITY IN AMP (Watt-hour Meter Equipment)	PANELS FOR ONE LAMP CIRCUIT			* PANELS FOR TWO LAMP CIRCUITS			Fig. No.	Main Panel Cat. No.	Watt-hour Meter Equipment Cat. No.
				Fig. No.	Main Panel Cat. No.	Watt-hour Meter Equipment Cat. No.	Fig. No.	Main Panel Cat. No.	Watt-hour Meter Equipment Cat. No.			
5	6.6, 7.5	4.0	10	9	2X438	258606	10	2X450	258606	11	2X444	258617
10	6.6, 7.5	6.0	20	9	2X439	258607	10	2X451	258607	11	2X445	258618
15	6.6, 7.5	10.0	30	9	2X440	258608	10	2X452	258608	11	2X446	258619
20	6.6, 7.5	12.0	40	9	2X441	258609	10	2X453	258609	11	2X447	258620
25	6.6, 7.5	15.0	50	9	2X442	258610	10	2X454	258610	11	2X448	258621
30	6.6, 7.5	20.0	60	9	2X443	258611	10	2X455	258611	11	2X449	258622
35	6.6, 7.5	20.0	60	..	.....	.....	10	2X456	258612	..	.....	.....
40	6.6, 7.5	25.0	80	..	.....	.....	10	2X457	258613	..	.....	.....
50	6.6, 7.5	30.0	80	..	.....	.....	10	2X458	258614	..	.....	.....
60	6.6, 7.5	40.0	100	..	.....	.....	10	2X459	258615	..	.....	.....
70	6.6, 7.5	40.0	125	..	.....	.....	10	2X460	258616	..	.....	.....

* Two-circuit panels up to and including 30 kw are for transformers with single-circuit secondaries. Above 30 kw the panels are arranged for multicircuit secondary transformers. Refer to connection diagrams, page 242.

Cat. No. of complete panels do not include watt-hour meter, which should be ordered and priced separately, if required.

PANEL

Each panel Cat. No. includes one panel with tie rods, a 5-amp Type AD-6 ammeter with 10-amp scale, current transformer, necessary oil circuit breakers mounted on back of panel, enclosed primary fuses, card holders, and name-plate.

WATTHOUR METER

Each watt-hour meter Cat. No. includes one 110-volt, 5-amp Type IS-8 single-phase watt-hour meter, current transformer, and potential transformer with fuses and supports. The watt-hour meter is mounted on front of the main panel, and the instrument transformers and fuses are mounted on the back.

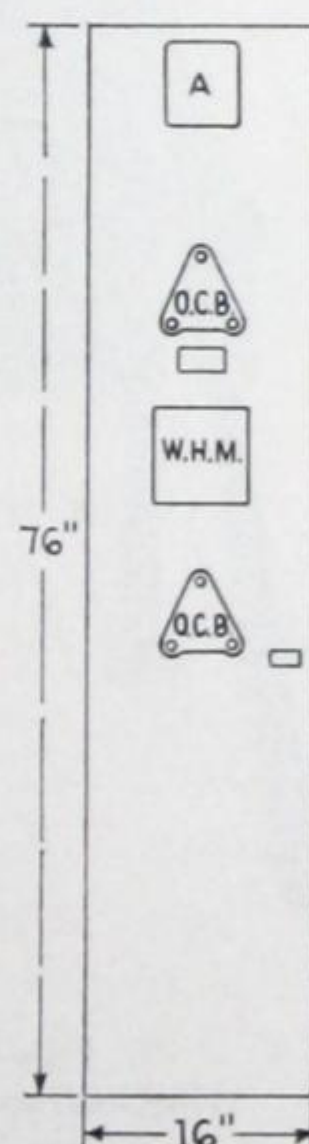


Fig. 9

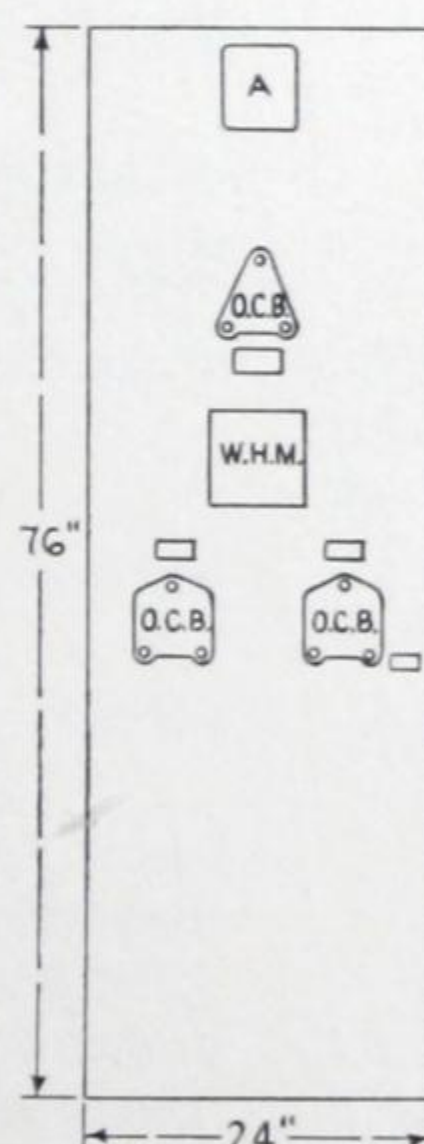


Fig. 10

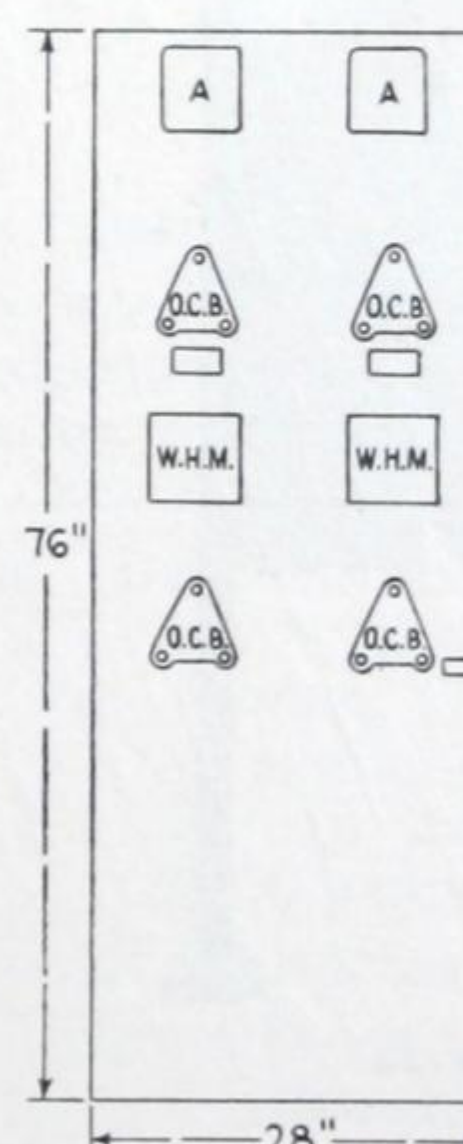


Fig. 11

NOVALUX CONSTANT-CURRENT TRANSFORMER CONTROL

Station Type RV-2

TYPE FK-41 OIL-CIRCUIT-BREAKER PANELS

6.6 or 7.5 Secondary Amperes

† 2300 Volts
Any Frequency

NOR- MAL KW RATING (See Lamp Capac- ity Table, Page 224)	* ONE LAMP CIRCUIT PER TRANSFORMER						† TWO LAMP CIRCUITS PER TRANSFORMER			‡ WATTHOUR METER EQUIPMENT (60 Cycles Only)						§ PELLET ARRESTERS			
	For Control of ONE Trans- former			For Control of TWO Trans- formers			For Control of ONE Trans- former			For Panel to Control ONE Transformer with One or Two Lamp Circuits per Transformer			For Panel to Con- trol TWO Trans- formers with One Circuit per Transformer			For Outdoor Service Only			
	π CAT. NO.	LIST PRICE Class GO- 51	AP- PROX SHIP WT in Lb	CAT. NO.	LIST PRICE Class GO- 51	AP- PROX SHIP. WT in Lb	π CAT. NO.	LIST PRICE Class GO- 51	AP- PROX SHIP. WT in Lb	AMP. CAP. Cur- rent Trans.	CAT. NO.	LIST PRICE Class GO- 51	AP- PROX SHIP. WT in Lb	CAT. NO.	LIST PRICE Class GO- 51	AP- PROX SHIP. WT in Lb	SINGLE-POLE CAT. NO.	LIST PRICE Class GO- 75	AP- PROX SHIP. WT in Lb
5	2X438	\$550	345	2X444	\$1050	605	2X450	\$750	490	10	258606	\$220	75	258617	\$440	150	9LA10A2	\$14.00	11
10	2X439	550	345	2X445	1050	605	2X451	750	490	20	258607	220	75	258618	440	150			
15	2X440	550	345	2X446	1050	605	2X452	750	490	30	258608	220	75	258619	440	150			
20	2X441	550	345	2X447	1050	605	2X453	750	490	40	258609	220	75	258620	440	150	9LA10A4	26.00	18
25	2X442	550	345	2X448	1050	605	2X454	750	490	50	258610	220	75	258621	440	150			
30	2X443	550	345	2X449	1050	605	2X455	825	500	60	258611	220	75	258622	440	150			
35	.....	...	...	.....	...	...	2X456	825	500	60	258612	220	75	.....	...	...	9LA10A5	34.00	30
40	.....	...	...	.....	...	...	2X457	825	500	80	258613	220	75	.....	...	...			
50	.....	...	...	.....	...	...	2X458	825	500	80	258614	220	75	.....	...	...	9LA10A6	46.00	37
60	.....	...	...	.....	...	...	2X459	825	500	100	258615	220	75	.....	...	...			
70	.....	...	...	.....	...	...	2X460	825	500	125	258616	220	75	.....	...	...	9LA10A7	60.00	40

* Panels are not furnished equipped with K-41 oil circuit breakers for single-circuit transformers above 30 kw.

† The K-41 circuit breaker cannot be used on primary circuits above its normal rating of 4500 volts, 60 amperes. The panels listed are designed for 2300 volts, 25 to 140 cycles and will be so furnished unless otherwise ordered. No additional charge is made for 1150-volt panels.

‡ Panels, Cat. Nos. 2X438 to 2X443 inclusive, and panels, Cat. Nos. 2X450 to 2X460 inclusive, can be supplied with a Type FK-33 oil circuit breaker and undercurrent device in place of the Type FK-41 oil circuit breaker on the primary side, at a list price increase of \$180.00 per panel.

§ Designed for 60 cycles only but can be furnished for other frequencies at a special price.

§ Lightning arresters listed are for the protection of the load side of the constant-current transformer. When the single-circuit constant-current transformers are operated with multicircuit panels, lightning arresters should be installed on each circuit, and each arrester should be selected for the total kilowatt rating of the transformer. Arresters are suitable only for installations at altitudes below 6000 ft. For altitudes above 6000 ft, obtain special recommendations.

¶ Panels up to and including 30 kw are for transformers with single-circuit secondaries. Above 30 kw, the panels are arranged for multicircuit transformers. Refer to connection diagrams, page 242.

Cat. No. of complete panels do not include watthour meter, which should be ordered and priced separately, if required.

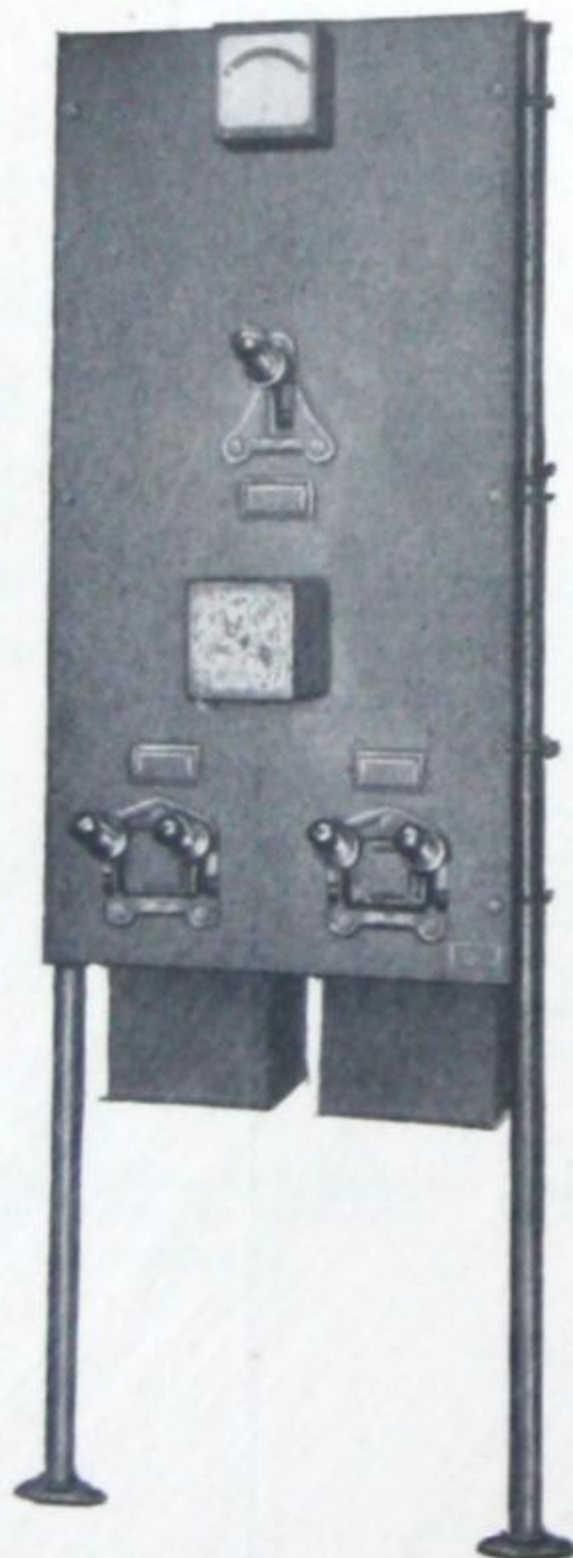


Fig. 12
(Photograph 844476)
(Front View)

Two-circuit panel with watthour meter
for control of one transformer

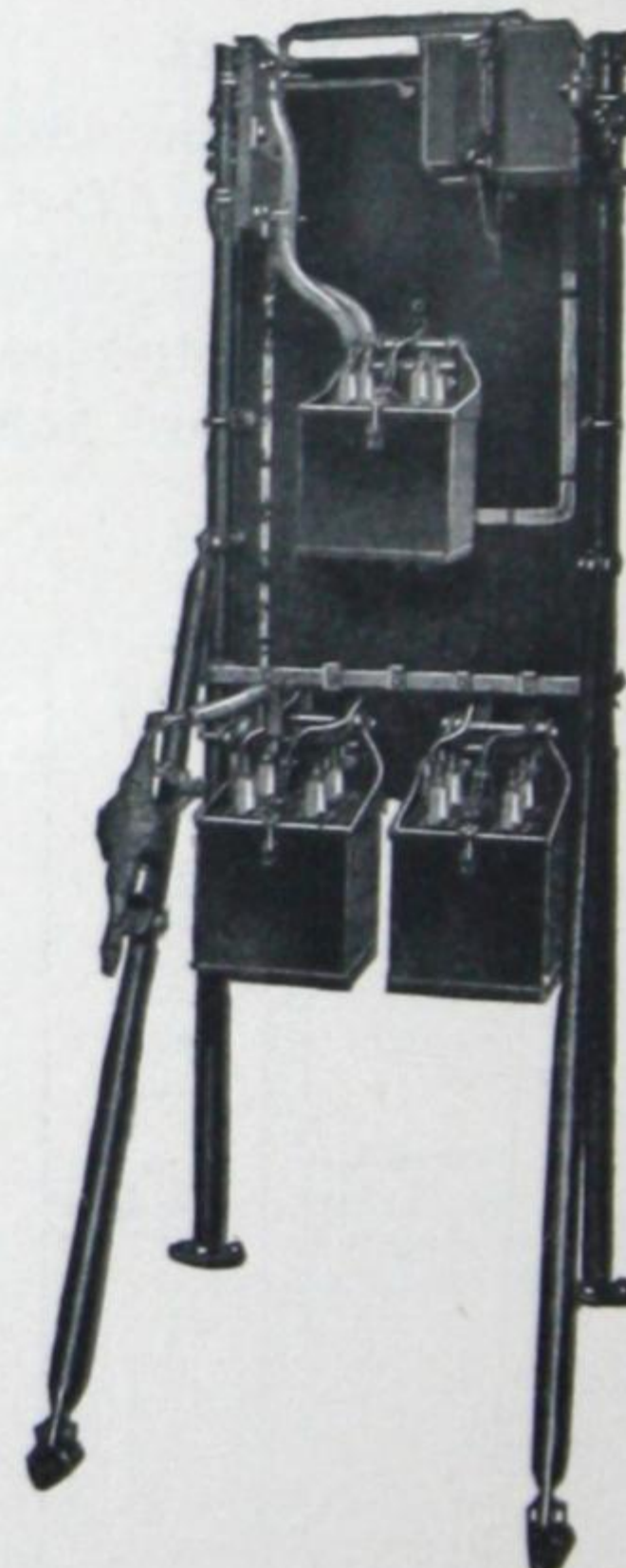


Fig. 13
(Photograph 408694)
(Rear View)

Two-circuit panel with watthour meter
for control of one transformer

NOVALUX REMOTE-CONTROL APPARATUS

Type CR7841 Novalux Controller



Fig. 1
(Photograph 476088)
CR7841-C or -E pole-type controller



Fig. 2
(Photograph 480480)
CR7841-C subway-type Novalux controller

APPLICATION

SERVICE

Double-pole, single-throw magnetic switch, oil-filled, for remote operation of constant-current street-lighting transformers. For pole or subway installation, indoor or outdoor.

Also for remote control of group multiple-lighting motors, or the switching of series lighting circuits for part-night operation.

FORMS AVAILABLE

TYPE CR7841-C NOVALUX CONTROLLER

A general-purpose controller, available in practically any desired form and suitable for any common primary voltage and constant-current transformer rating.

1. Rating: For control of all automatic-starting, constant-current transformers (Types RO, ROC, RF, or equivalent) on circuits up to 7500 volts.
2. Position of Contacts:
 - (a) Normally open—contacts open when coil is de-energized.
 - (b) Normally closed—contacts closed when coil is de-energized.
 - (c) Latching-in—contacts latch in closed position when coil is first energized; remain closed when coil is de-energized. Contacts unlatch but remain closed when coil is again energized; contacts open when coil is again de-energized.

3. Operating Coils:

- (a) Series coils for any standard current rating.
- (b) Shunt coils for any standard secondary distribution voltage and frequency.

4. Tanks:

- (a) With hanger hooks for pole mounting.
- (b) With brackets for wall mounting (not listed; apply to General Office for details if desired).
- (c) For subway installation, with wiping-sleeve connections.

TYPE CR7841-E NOVALUX CONTROLLER

A lower-priced controller for small constant-current transformer applications where the high insulation values of the CR7841-C controller are not required. Only popular forms are available.

1. Rating: For control of all automatic-starting, constant-current transformers (Types RO, ROC, RF, or equivalent) up to and including 15 kw on circuits up to 2500 volts.
2. Position of Contacts:
 - (a) Normally open—contacts open when coil is de-energized.
 - (b) Normally closed—contacts closed when coil is de-energized.

NOVALUX REMOTE-CONTROL APPARATUS

APPLICATION (Contd)

3. Operating Coils:

- (a) Series coils for any standard current rating.
- (b) Shunt coils for any standard secondary distribution voltage and frequency.

4. Tank: With hanger hooks for pole mounting.

METHODS OF OPERATION

1. Pilot-wire connection to a manual switch in an attended station. Recommended types of controller:

- (a) Normally open with shunt coil.
- (b) Normally closed with shunt coil (desirable to assure operation of controlled circuit in case of control-power interruption).
- (c) Latching-in with shunt coil. (Operation is obtained by momentarily energizing the pilot circuit, which saves the cost of power consumed by pilot circuit.)

2. Automatic Time Switch. Recommended types of controller:

- (a) Normally open with shunt coil.
- (b) Normally closed with shunt coil (desirable to assure operation of controlled circuit in case of control-power interruption).

3. Novalux Photoelectric Controller.* Recommended type of controller:

- (a) Normally open with shunt coil. (Photoelectric relay automatically closes in case of tube failure or other operating difficulty).

4. Carrier-current Control. Recommended types of controller:

- (a) Normally open with shunt coil if carrier-current relay contacts are normally open.
- (b) Normally closed with shunt coil if carrier-current relay contacts are normally closed.

5. Cascade from Series Circuits. Recommended type of controller:

- (a) Normally open with series coil.

ELECTRICAL CHARACTERISTICS

INSULATION

TYPE CR7841-C NOVALUX CONTROLLER

1. High-potential test without oil.

- (a) 25,000 volts between all live parts and ground.
- (b) 25,000 volts between line and load leads.

TYPE CR7841-E NOVALUX CONTROLLER

1. High-potential test without oil.

- (a) 6000 volts between all live parts and ground.
- (b) 6000 volts between line and load leads.

INTERRUPTING CAPACITY

TYPE CR7841-C NOVALUX CONTROLLER

- At 7500 volts, single-phase: 15 amperes a-c
- At 6600 volts, single-phase: 25 amperes a-c
- At 4500 volts, single-phase: 35 amperes a-c
- At 2400 volts, single-phase: 50 amperes a-c
- At 220 volts, single-phase: 100 amperes a-c

TYPE CR7841-E NOVALUX CONTROLLER

- At 2400 volts, single-phase: 50 amperes a-c
- At 220 volts, single-phase: 50 amperes a-c

NOTE—Type CR7841-E Novalux controller is not recommended for any constant-current transformer of rated primary voltage above 2500 volts or capacity above 15 kw. This limitation is necessary because of the high-voltage surge sometimes caused by a rapid collapse of the magnetic field when the switch is opened.

CONSTRUCTION

CONTACTS

1. Two sets of stationary cadmium-plated copper contact tips mounted on fixed brackets.
2. Moving bar connecting across two stationary contact tips provides double break.
3. Moving connecting bar flexibly supported on guide and molded composition con-

tact arm which is pivoted on heavy steel hinge pin.

4. Flexible support for moving connecting bar provides wiping action when contacts close and prevents fusing or pitting of contacts.

5. Contacts located at top of mechanism in most accessible position; can be changed under oil if desired.

NOVALUX REMOTE-CONTROL APPARATUS

CONSTRUCTION (Cont)

OPERATING COIL

1. Solenoid type, with laminated core and armature, is exceptionally powerful for positive closing.
2. Coil located below contacts, so that heat generated helps maintain fluidity of oil in cold weather.
3. Armature seats firmly and accurately, for quiet operation.
4. Coils available for any standard series-circuit current, multiple-circuit voltage, or frequency.

ASSEMBLY OF MECHANISM

1. Armature acts directly on contact arm without links or levers and with minimum friction.
2. Gravity acting on the heavy armature gives quick operation when coil is de-energized.
3. Mechanism is assembled on a heavy, strong, molded composition base.
4. Entire mechanism is easily removed from the case as a unit.
5. Coil and armature easily removed without otherwise disassembling the mechanism.
6. Only molded composition or metal parts are used—no wood parts.

LATCHING DEVICE (CR7841-C Novalux Controllers Only)

1. Consists of an auxiliary cam with four equally spaced slots, and a cam follower that moves with the contact arms.
2. Cam is rotated by armature through a ratchet device; cam follower engages in the cam slot after each alternate movement.
3. Each time coil is energized, cam follower is raised, and cam rotates one-eighth revolution. When coil is de-energized, armature drops; but cam follower is not over cam slot, and the contact arms are held up. When coil is again energized, the ratchet device rotates cam so that when coil is again de-energized, the cam follower drops in cam slot and releases contact arms.
4. Cam and follower are of molded composition. All metal parts are of cadmium-plated steel.

POLE-TYPE TANK

1. Heavy copper-bearing steel, all-welded construction, round shape to harmonize with Type RO constant-current transformers, finished in durable gray paint over wrought-iron priming coat.
2. Cast-iron cover clamped on with two large wing nuts, easily removed when desired.
3. Individual bushings and bushing housings used for each line and load lead and duplex operating-coil lead.

4. Bushing housings at top of tank enclose greater portion of porcelain bushings for protection and keep bushings from obstructing access to mechanism.

5. Bushing housings designed so that oil splashed into housings will drain back into tank.

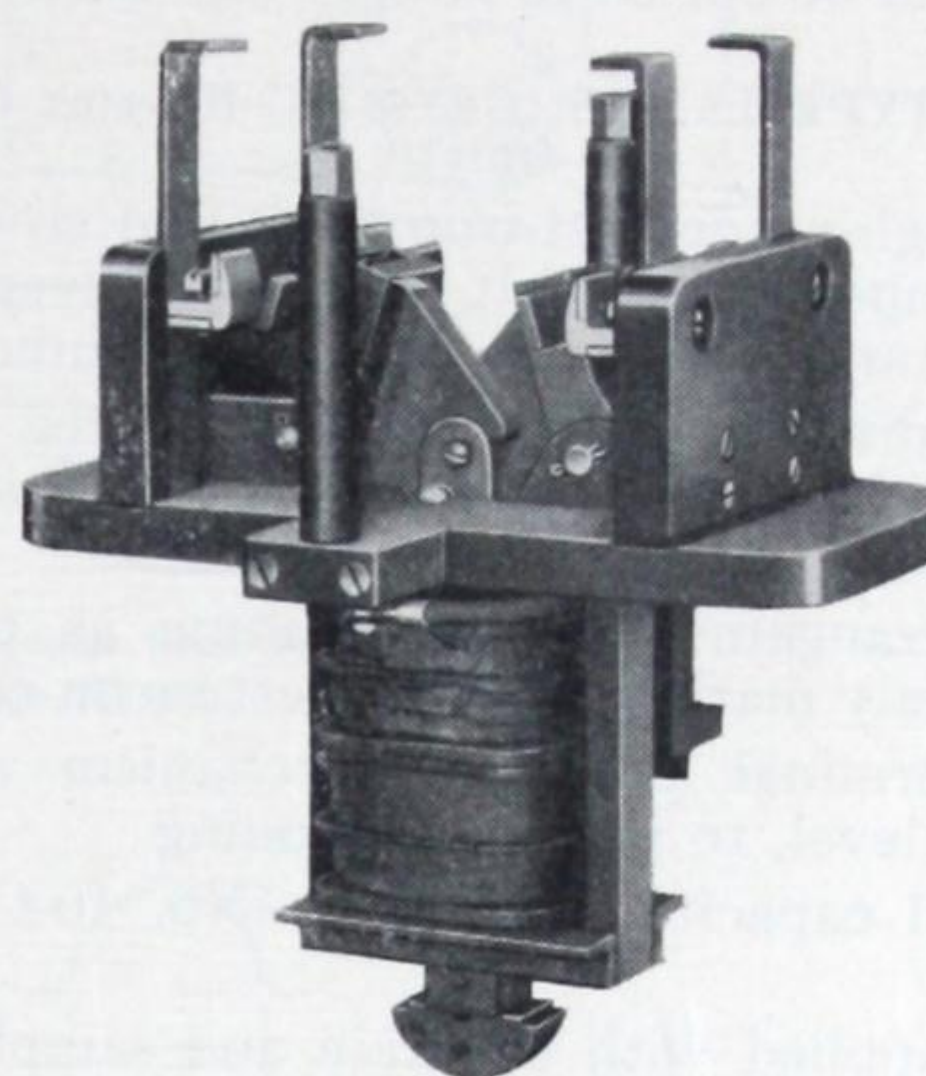


Fig. 3

(Photograph 510977)

CR7841-C and -E Novalux controller mechanism

6. Heavy wet-process porcelain bushings are firmly clamped in housings against cork gaskets by means of simple mechanical holders.

7. Porcelain bushings easily removed by loosening only two screws.

8. Corresponding line and load leads located on same side of the tank, line leads towards pole and coil leads on front. (Similar to RO transformer arrangement.)

9. Line and load leads consist of single-conductor, 27/24 stranded, No. 10 Awg tinned copper, connected above oil level to contact brackets, compounded into bushings and extending approximately 8 inches outside of the bushings, with soldered terminals.

10. Operating coil lead is duplex No. 10 Awg cable, compounded in bushing and extending approximately 8 inches outside of the bushing, with soldered terminal.

11. All leads connected to terminal posts on mechanism assembly above oil level, which prevents siphoning.

12. Oil Capacity

CR7841-C—6 gallons—No. 10-C Transil oil

CR7841-E—5 gallons—No. 10-C Transil oil.

13. Supplied with oil drain and sampling plug at the bottom, also pipe-plug opening in cover to permit adding oil.

NOVALUX REMOTE-CONTROL APPARATUS

CONSTRUCTION (Cont)

14. Try-cock provided for easy checking of oil level.

15. Tanks factory-tested for oil-tightness.

16. Heavy steel hanger brackets welded to tank.

17. Strong steel crossarm hanger hooks are supplied, to be bolted to hanger brackets.

SUBWAY-TYPE TANKS (CR7841-C Novalux Controller Only)

1. High-grade cast-iron tank and cover; with cover clamped against felt gaskets by seven bolts—will withstand submersion in flooded manholes.

2. Individual copper wiping sleeves, approximately 1 in. inside diameter, for line and load leads and duplex operating-coil cable.

3. Arrangement of leads same as pole-type tank, plainly marked in raised letters on cover.

4. Terminal posts on mechanism assembly above oil level, to prevent siphoning.

5. Oil capacity: 6 gallons—No. 10-C Transil oil.

6. Supplied with oil drain and sampling plug at the bottom, also pipe-plug opening in cover to permit adding oil.

7. Tank factory tested for oil-tightness.

MANUAL OPERATING LEVER

1. On pole-type tank, manual operating lever is located on pole side, conveniently accessible without reaching around leads. Subway type may be mounted with lever in convenient position.

2. Provides "HAND"—"OFF"—"AUTOMATIC" positions, for manual switching on and off as well as normal operation—permits safe disconnecting of load for inspection or repair.

3. When in "OFF" position, on the shunt type, the coil circuit is disconnected and contacts are open. On the series type, the series coil is short-circuited and contacts are open.

4. Lever is latched in any position with spring bolt.

5. Lever is attached to tank with stuffing gland; and can be operated with tank cover off for inspection.

6. Has auxiliary lever for attaching pole-base manual-control device.

7. All metal construction—no wooden links used.

DESIRABLE FEATURES

CONTACTS

Mounted at top of mechanism.

Double break.

Flexibly mounted with wiping action.

MECHANISM

Insulating parts molded composition—no wood.

Easily removable as unit.

TANKS

Leads brought through individual bushings.

Bushings easily removable.

Leads connected above oil level prevent oil siphoning.

MANUAL OPERATING LEVER

May be latched in on, off, or automatic positions.

Located for convenient operation.

May be operated with cover removed.

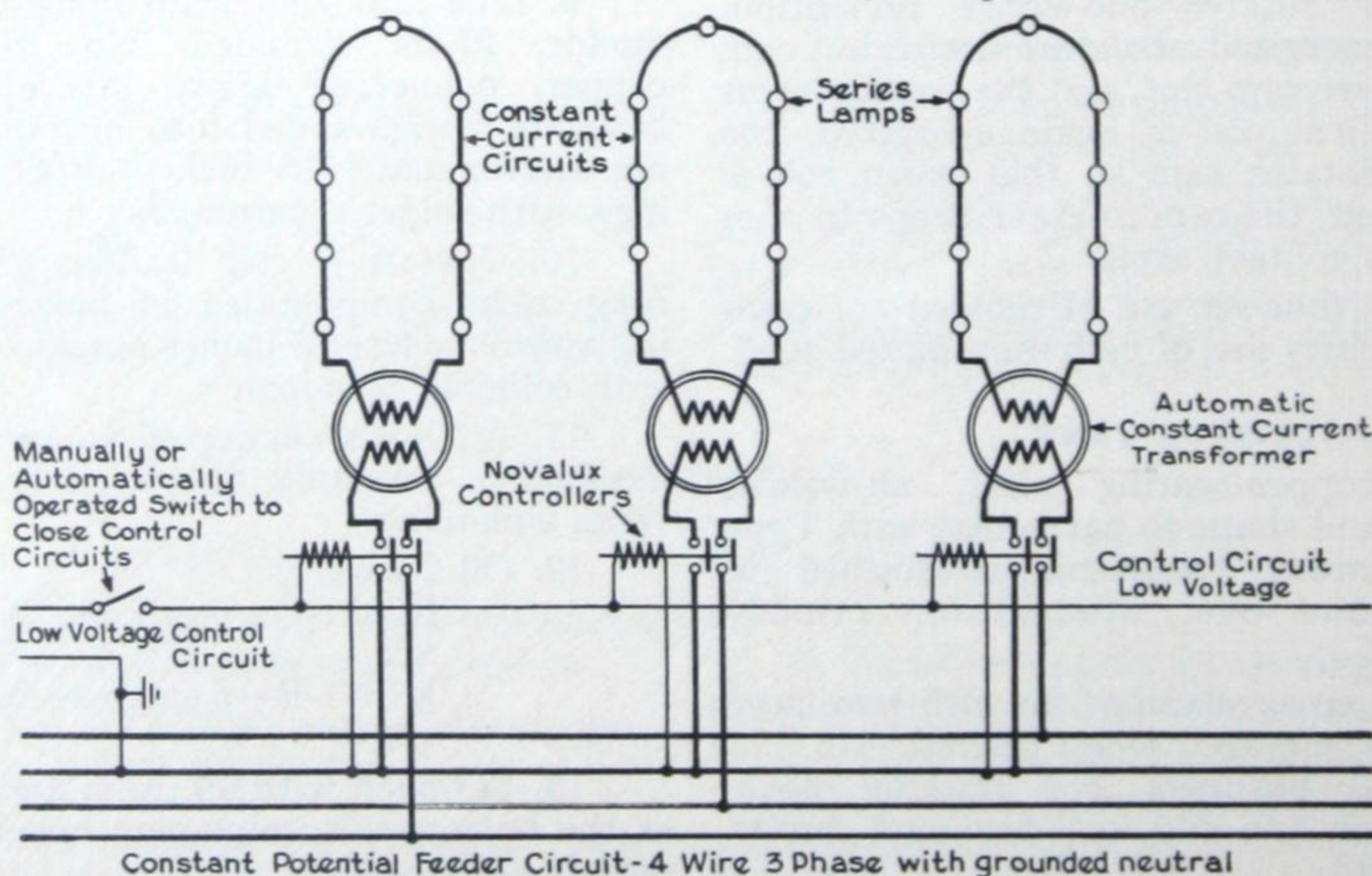


Diagram of pilot-wire control, Type RO transformers. By closing a low-voltage pilot circuit, controllers are operated which connect the transformers to the feeder circuit

NOVALUX REMOTE-CONTROL APPARATUS

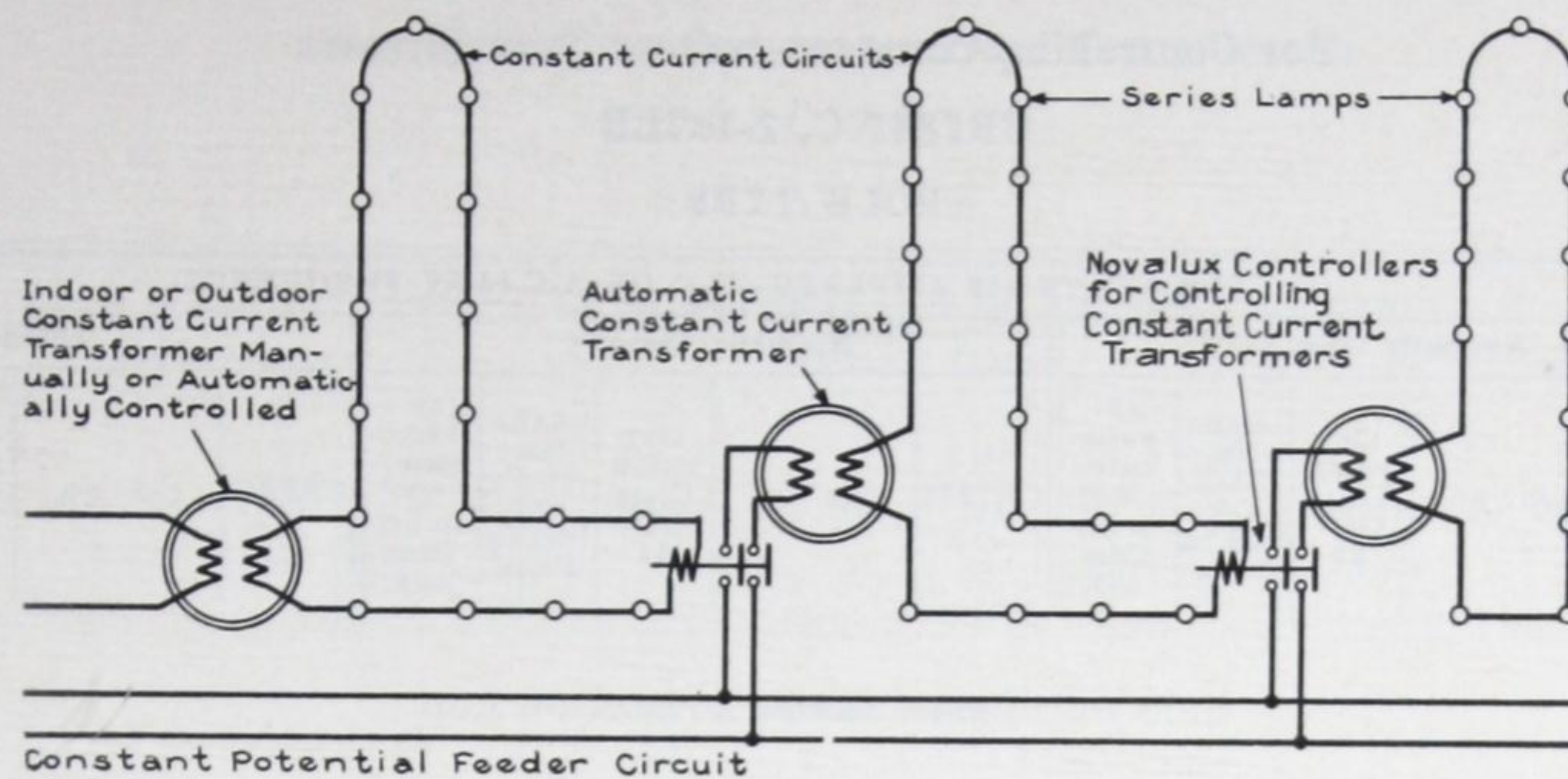


Fig. 5

Diagram illustrating cascade control of series lighting circuits. Each circuit contains a series controller which controls the one beyond

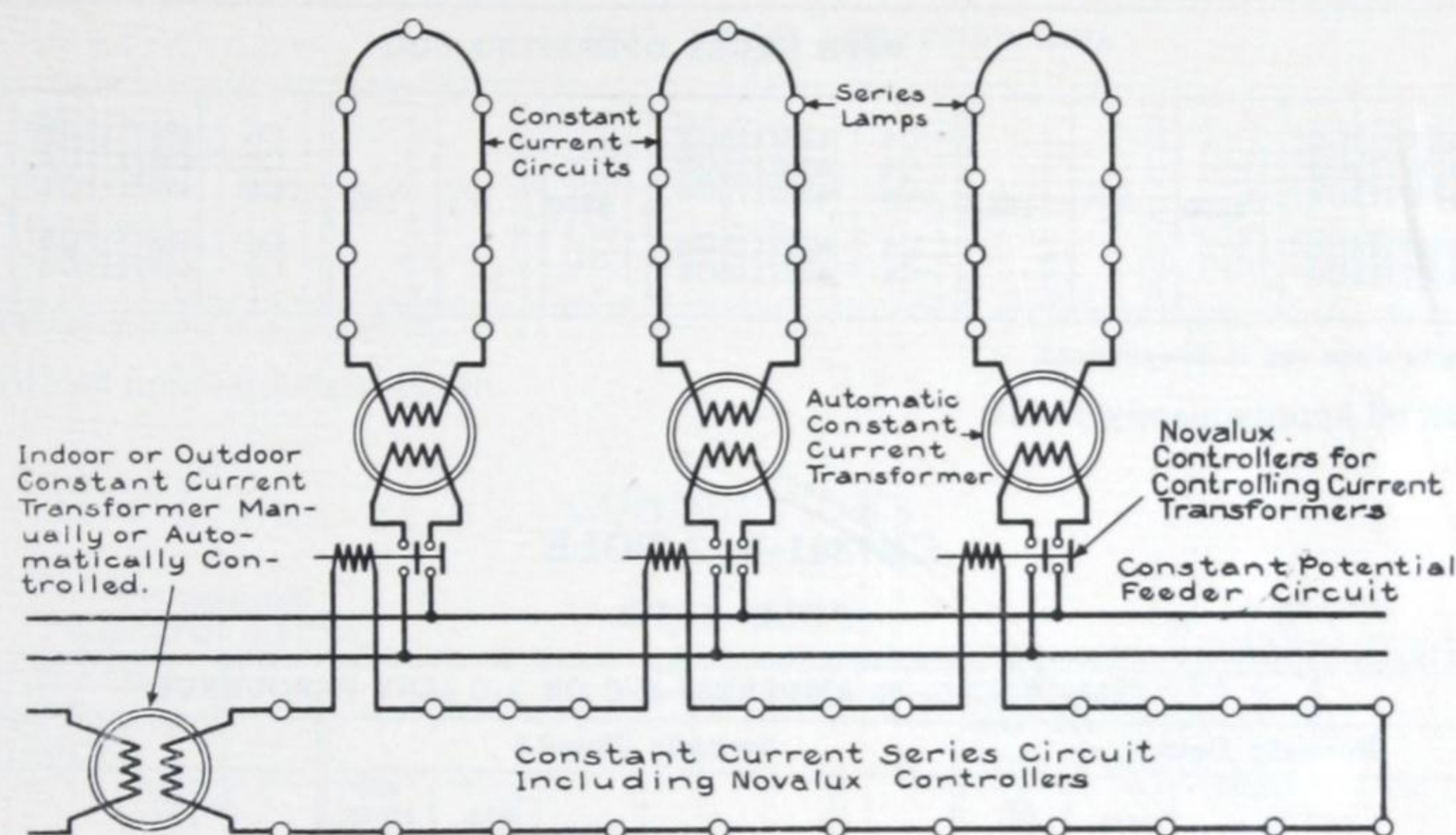


Fig. 6

Diagram showing how several Type RO transformers can be controlled by series controllers placed in a series lighting circuit which also acts as a control circuit

OPERATING-COIL DATA

TYPE	VOLTS at 60 Cycles Frequency	CONTINUOUS AMPERES	INRUSH AMPERES	WATTS
All CR7841-C and -E	110	3.3	8.8	100
	220	1.65	4.4	100
	440	0.88	2.2	100
	94	6.6	....	140
	82	7.5	....	140
	32	20	....	140

These data are approximate only.

Shunt coils pick up at 85 per cent of rated voltage; drop out at about 50 per cent of rated voltage. Calculate control-circuit conductor size on basis of inrush current.

For data at other supply voltage, current, or frequency, apply to nearest sales office.

NOVALUX REMOTE-CONTROL APPARATUS

POLE- AND SUBWAY-TYPE NOVALUX CONTROLLERS

For Controlling Constant-current Transformers

CR7841-C, 2-POLE

POLE TYPE

7500 VOLTS—15 AMPERES—D-C OR A-C (ANY FREQUENCY)															
Coil Rating	Normally Open †					Normally Closed †					Latched In				
	CR7841	CAT. NO.	LIST PRICE Class GO-51	GAL No. 10-C Oil Incl. in Price	AP-PROX SHIP. WT in Lb (less oil)	CR7841	CAT. NO.	LIST PRICE Class GO-51	GAL No. 10-C Oil Incl. in Price	AP-PROX SHIP. WT in Lb (less oil)	CR7841	CAT. NO.	LIST PRICE Class GO-51	GAL No. 10-C Oil Incl. in Price	AP-PROX SHIP. WT in Lb (less oil)
WITH SERIES OPERATING COIL															
4	C1	4387112G4	\$200	6	125	C3	4387114G4	\$200	6	125	C5	4387116G4	\$270	6	125
5.5	C1	4387112G10				C3	4387114G10				C5	4387116G10			
6.6	C1	4387112G7				C3	4387114G7				C5	4387116G7			
7.5	C1	4387112G8	\$200	6	125	C3	4387114G8	\$200	6	125	C5	4387116G8	\$270	6	125
20	C1	4387112G11				C3	4387114G11				C5	4387116G11			
WITH SHUNT OPERATING COIL															
110	C2	4387113G2	\$200	6	125	C4	4387115G2	\$200	6	125	C6	4387117G2	\$270	6	125
220	C2	4387113G3				C4	4387115G3				C6	4387117G3			
440	C2	4387113G4				C4	4387115G4				C6	4387117G4			
110	C2	4387113G5	\$200	6	125	C4	4387115G5	\$200	6	125	C6	4387117G5	\$270	6	125
220	C2	4387113G6				C4	4387115G6				C6	4387117G6			

† Position of contacts when coil is de-energized.

Net weight with oil approximately 125 lb.

CR7841-E, 2-POLE

POLE TYPE

2500 VOLTS—50 AMPERES—D-C OR A-C (ANY FREQUENCY)														
Coil Rating	Normally Open †					Normally Closed †								
	CR7841	CAT. NO.	LIST PRICE Class GO-51	GAL No. 10-C Oil Incl. in Price	AP-PROX SHIP. WT in Lb (less oil)	CR7841	CAT. NO.	LIST PRICE Class GO-51	GAL No. 10-C Oil Incl. in Price	AP-PROX SHIP. WT in Lb (less oil)				
WITH SERIES OPERATING COIL *														
6.6	E1	4387891G7	\$158	5	110									
7.5	E1	4387891G8	158	5	110									
20	E1	4387891G11	158	5	110									
WITH SHUNT OPERATING COIL														
110	E2	4387892G2	\$158	5	110	E4	4387894G2	\$158	5	110				
220	E2	4387892G3	158	5	110	E4	4387894G3	158	5	110				
110	E2	4387892G5	158	5	110	E4	4387894G5	158	5	110				
220	E2	4387892G6	158	5	110	E4	4387894G6	158	5	110				

* For series circuits up to 2500 volts (open-circuit voltage of constant-current transformer).

† Position of contacts when coil is de-energized.

Net weight with oil approximately 110 lb.

Apply to nearest Sales Office for quotation on other forms and ratings.

NOVALUX REMOTE-CONTROL APPARATUS

POLE- AND SUBWAY-TYPE NOVALUX CONTROLLERS (Cont)

For Controlling Constant-current Transformers

CR7841-C, 2-POLE

SUBWAY TYPE

Coil Rating		7500 VOLTS—15 AMPERES—D-C OR A-C (ANY FREQUENCY)														
		Normally Open†					Normally Closed†					Latched In				
		CR7841	CAT. NO.	LIST PRICE Class GO-51	GAL No. 10-C Oil Incl. in Price	AP-PROX SHIP. WT in Lb (less oil)	CR7841	CAT. NO.	LIST PRICE Class GO-51	GAL No. 10-C Oil Incl. in Price	AP-PROX SHIP. WT in Lb (less oil)	CR7841	CAT. NO.	LIST PRICE Class GO-51	GAL No. 10-C Oil Incl. in Price	AP-PROX SHIP. WT in Lb (less oil)
Amperes D-c or A-c (Any Frequency)		WITH SERIES OPERATING COIL														
4		C7	4387118G4	\$280	6	200	C9	4387120G4	\$280	6	200	C11	4387122G4	\$350	6	200
5.5		C7	4387118G10				C9	4387120G10				C11	4387122G10			
6.6		C7	4387118G7				C9	4387120G7				C11	4387122G7			
7.5		C7	4387118G8	\$280	6	200	C9	4387120G8	\$280	6	200	C11	4387122G8	\$350	6	200
20		C7	4387118G11				C9	4387120G11				C11	4387122G11			
Volts	Cycles	WITH SHUNT OPERATING COIL														
110	60/50	C8	4387119G2	\$280	6	200	C10	4387121G2	\$280	6	200	C12	4387123G2	\$350	6	200
220	60/50	C8	4387119G3				C10	4387121G3				C12	4387123G3			
440	60/50	C8	4387119G4				C10	4387121G4				C12	4387123G4			
110	25	C8	4387119G5	\$280	6	200	C10	4387121G5	\$280	6	200	C12	4387123G5	\$350	6	200
220	25	C8	4387119G6				C10	4387121G6				C12	4387123G6			

† Position of contacts when coil is de-energized.

Net weight with oil approximately 160 lb.

CONNECTIONS

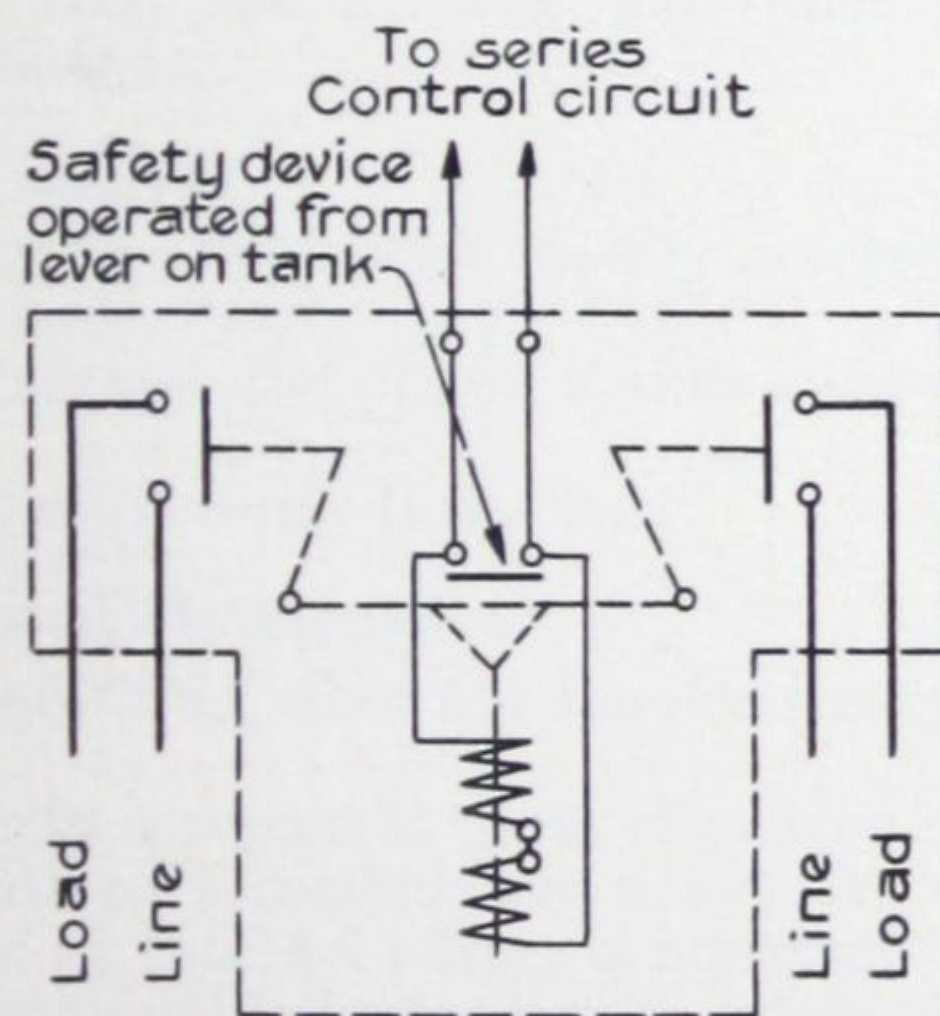


Fig. 7
(K-4901499)
Novalux controller
with series operating coil

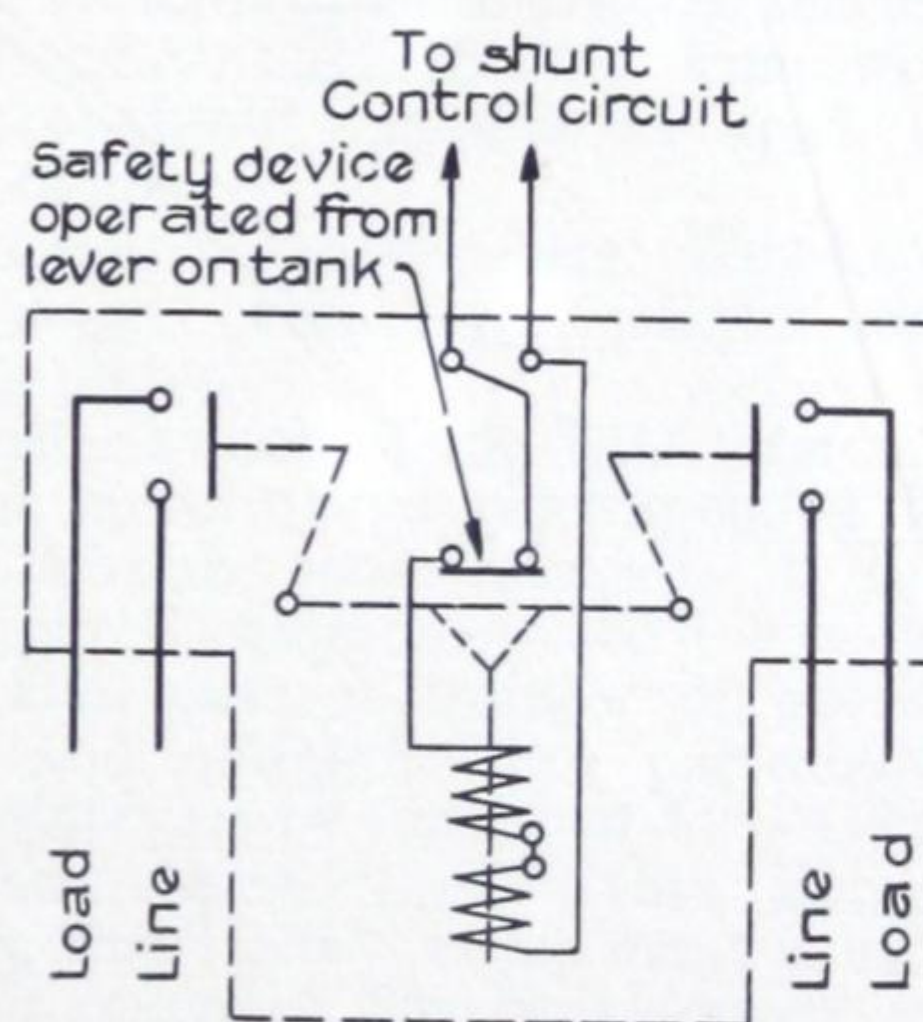


Fig. 8
(K-4901498)
Novalux controller
with shunt operating coil

NOVALUX PHOTOELECTRIC RELAY, CR7505-H7

For Control of Outdoor Lighting

APPLICATION

Street and highway lighting, floodlighting, sign lighting.

Either all-night or part-night operation.

For outdoor installation.

ADVANTAGES

Maximum Utility of Lighting

Turns lighting on and off according to seeing conditions at the most critical periods of the operating schedule, dusk and dawn.

Can be adjusted to give **same total burning hours** as with other types of control, **but with automatic daily compensation for daylight variations.**

Sensitive to very low levels of daylight.

Approximates definite time schedule very closely, both morning and night.

Easily adjusted to meet local conditions.

Inexpensive

First cost insignificantly small compared with lighting-system investment.

Relieves human operators from necessity of judging need for lighting; no other automatic control does this.

Easy to Operate

Easy to adjust with readily accessible knobs, independent "ON" and "OFF" adjustments, plainly marked dial plates, and new case construction.

Not critical in adjustment.

Low Cost of Maintenance

Dependable; does not require frequent attention.

Sturdy component parts of proved reliability; no delicate or supersensitive relays. Self-contained unit with all internal wiring completed.

Long tube life (according to actual experience, 3 years life of phototubes and at least a year's life of plotron tubes will usually be obtained).

Increase Prestige and Good Will

"Electric Eye" control has popular appeal; indicates progressive attitude toward improving effectiveness of lighting.

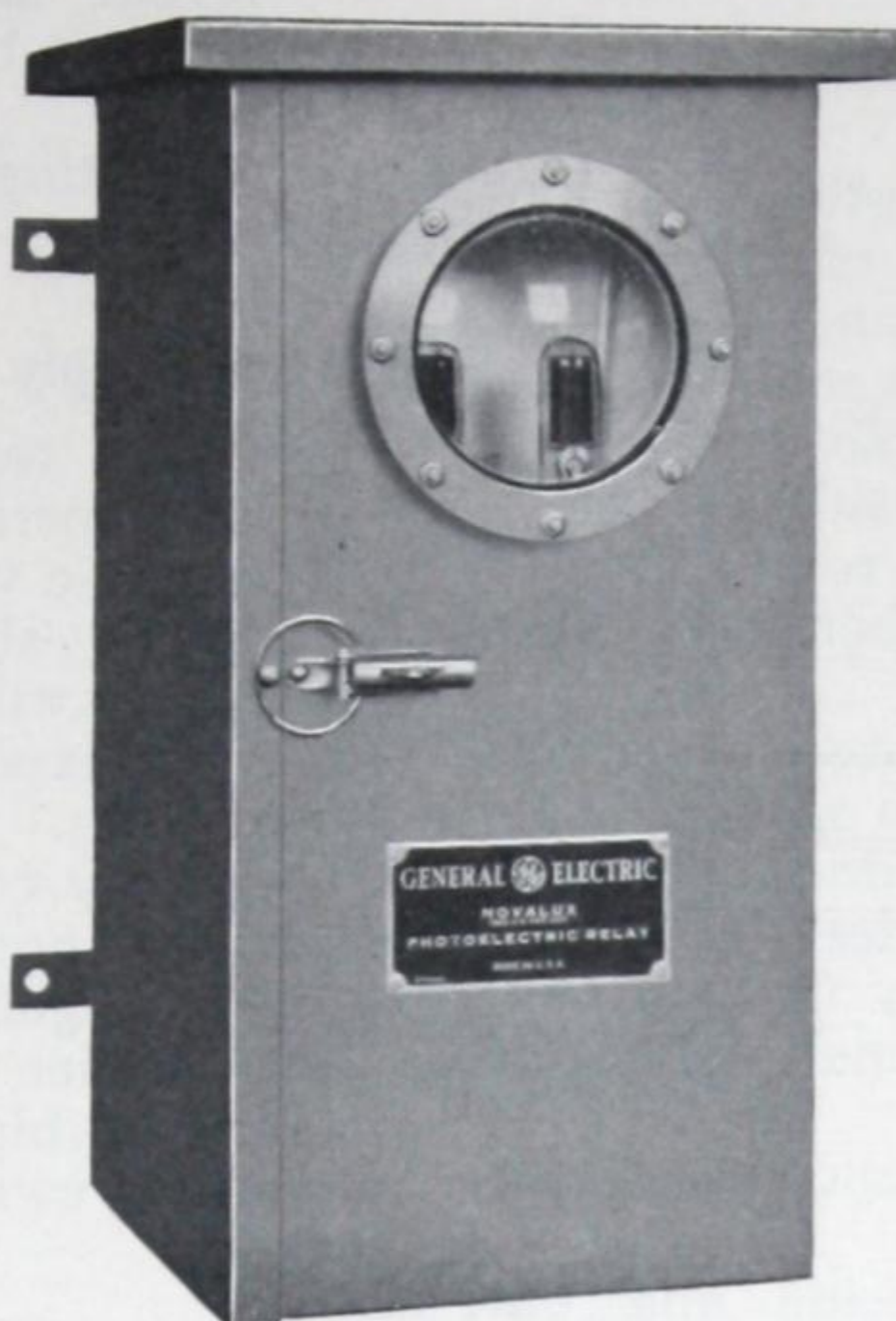


Fig. 1
Novalux photoelectric relay, CR7505-H7

CONSTRUCTION

Principle of Operation

Current through phototubes varies in proportion to daylight, is amplified by the plotron tube to operate a telephone-type relay. This relay in turn actuates the load relay, which has its own holding circuit to insure positive operation. Two phototubes in parallel connection give the high sensitivity needed for street-lighting control. Two adjusting potentiometers in the phototube circuit provide control of "ON" and "OFF" operation. A delayed-transfer switch makes these entirely independent, so that either can be set for any value of illumination within the working range of the unit.

Panel Assembly

Phototubes: Type PJ-23, similar to those used extensively in theater sound reproducers. Two used in street-lighting control; one in sign lighting.

Plotron tube: Type PJ-8, a sturdy long-life tube used extensively in automatic train-control equipments on locomotives.

Intermediate relay: Same type as used in telephone switchboards for reliable service.

Load relay: CR2820-1713 type with single-pole double-throw contacts for load (see load-capacity table).

Adjusting potentiometers: Well-known high-quality make, with large pointer knobs and indicating plates.

Transfer switch: Type T-11 time switch with Telechron motor (type recommended for operation at subzero temperatures). A simple and durable switch commonly used for water-heating control. Dial cut for transfer of potentiometers at noon and midnight. For part-night lighting control, dials can be furnished for "OFF" operation at any desired time. (Note: For part-night operation, the "OFF" adjustment is set at zero.)

Other material: The transformer, tube sockets, resistors, and other parts used are of corresponding high quality and durability, carefully selected for their ability to provide reliable service.

Assembly: All parts assembled on 1/8-inch insulating panel board, completely wired to terminals. Entire assembly easily removed from case if desired.

NOVALUX PHOTOELECTRIC RELAY, CR7505-H7

For Control of Outdoor Lighting

Enclosing Case

Material: Copper-bearing sheet steel with all joints electrically welded.

Door construction: Full length, with full-length hinge. Located on left side of case (facing window). Overlaps front, back, and bottom of case and is protected at the top by roof overhang. Felt gasket cemented to case. Simple, strong latch welded to case, with provision for padlock.

Window construction: Clear, round glass of convex form clamped between rubber-composition gaskets.

Phototube enclosure: Drawn-steel cover, fastened to inside of case with single wingnut. Permits adjustment of operation with door open.

Mounting brackets: Heavy steel, welded to case, with holes for $\frac{3}{8}$ -in. bolts (see Fig. 2). Crossarm hangers available at small additional charge.

Conduit knockouts: Two in bottom of case, for $\frac{1}{2}$ - or $\frac{3}{4}$ -inch conduit.

Finish: Aluminum paint, inside and out. Window clamp ring, studs, and nuts, and door latch are cadmium plated.

Load Capacity

Volts	Inductive Load	Incand. Lamp Load
115 volts a-c	10 amp*	2.5 amp
230 volts a-c	10 amp*	2.5 amp
115 volts d-c	0.3 amp	—
230 volts d-c	0.08 amp	—

* Inrush current must not exceed 35 amp.

INSTALLATION NOTES

Selecting a Location

Window should face north (to avoid direct sunlight on phototubes).

Locate high enough to avoid buildings, billboards, and other obstructions in the foreground.

Avoid stray light from nearby windows, floodlighted buildings or billboards, and street lights.

Mounting should be free from excessive vibration.

Power Supply

Use a regulated feeder, to avoid inconsistencies in operation due to varying voltage.

Any a-c voltage from 110 to 125 can be used.

Relay should be energized continuously. Sensitivity will change from day to day if phototubes are exposed to strong light without voltage across them.

Energy consumption at 115 volts, 60 cycles: Daytime, approx 15 watts; night, approx 20 watts.

Sign lighting and floodlighting are turned on much earlier than street lighting and do not require as high sensitivity in the control. One phototube can usually be used, installed in either socket.

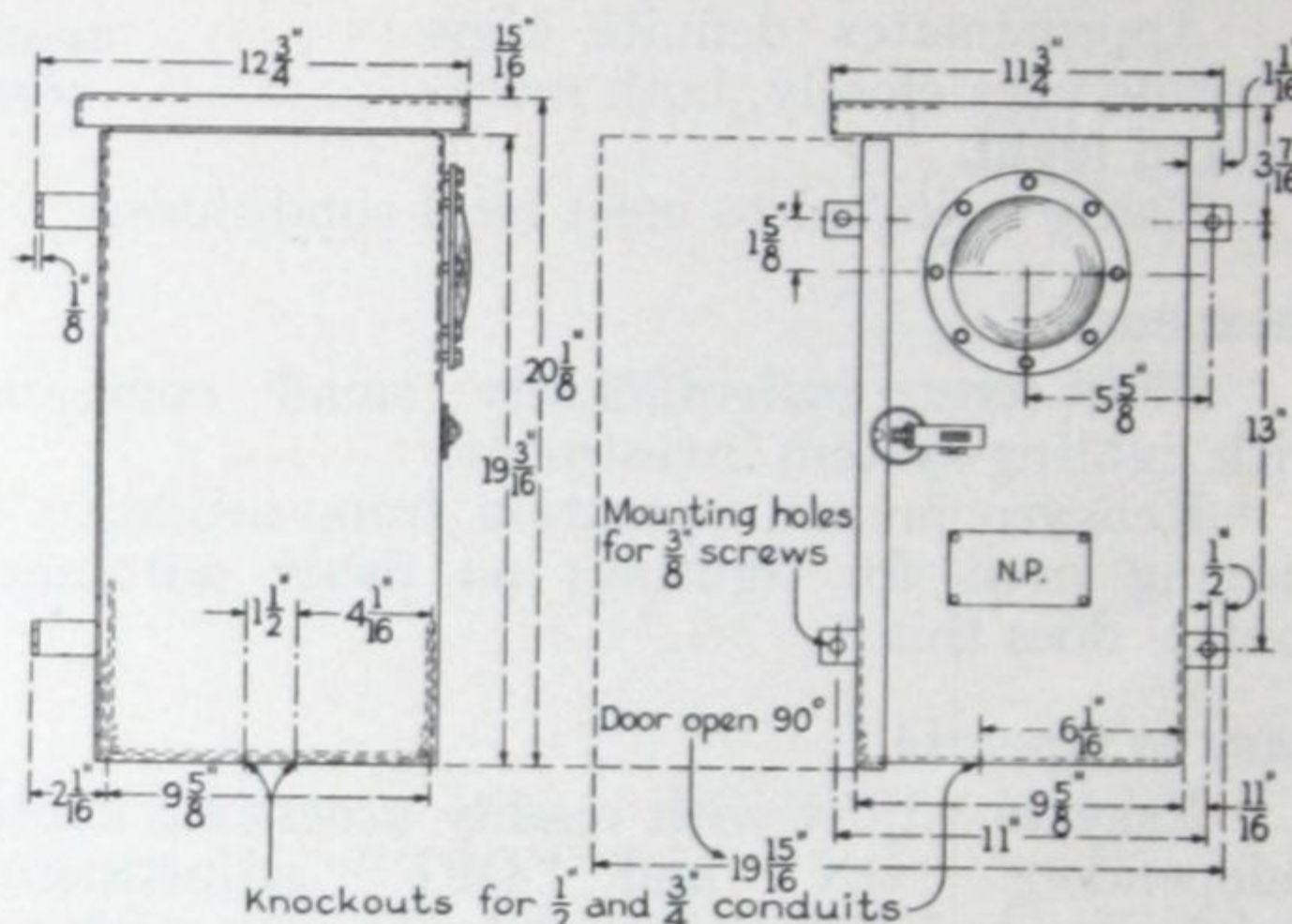


Fig. 2
Dimensions
(Outline L-2837030)

PRICES

TYPE	ELECTRICAL RATING	CAT. NO. ‡	LIST PRICE GO-51	APPROX WT IN LB		TUBES USED	
				Net	Ship.	Photo-tubes	Pliotron Tube
CR7505-H7	115 volts, 60 cycles	4987626G2	\$238.00	35	46	2 Type PJ-23 (See Note 2)	1 Type PJ-8

- ‡ 1. Tubes are included in price but not in Cat. No.
2. No deduction from price for omission of one phototube.
3. Relay has single-pole, double-throw load contact; can be used as normally open or normally closed or both.
4. Can be furnished for other voltages and frequencies, alternating current only. Refer proposition to nearest Sales Office for quotation.
5. Crossarm hangers, Cat. No. 4915425G1, \$5.75 list, GO-51 discount, per set of 2.
6. Wiring diagram: L-2837725.
7. Replacement-tube prices can be obtained from the nearest Sales Office.

G-E NOVALUX REMOTE-CONTROL SWITCHES

For Multiple Street Lighting

CR7843-A, 30-AMP CAPACITY



Fig. 1
(Photograph 488505)
CR7843-A Novalux
multiple switch

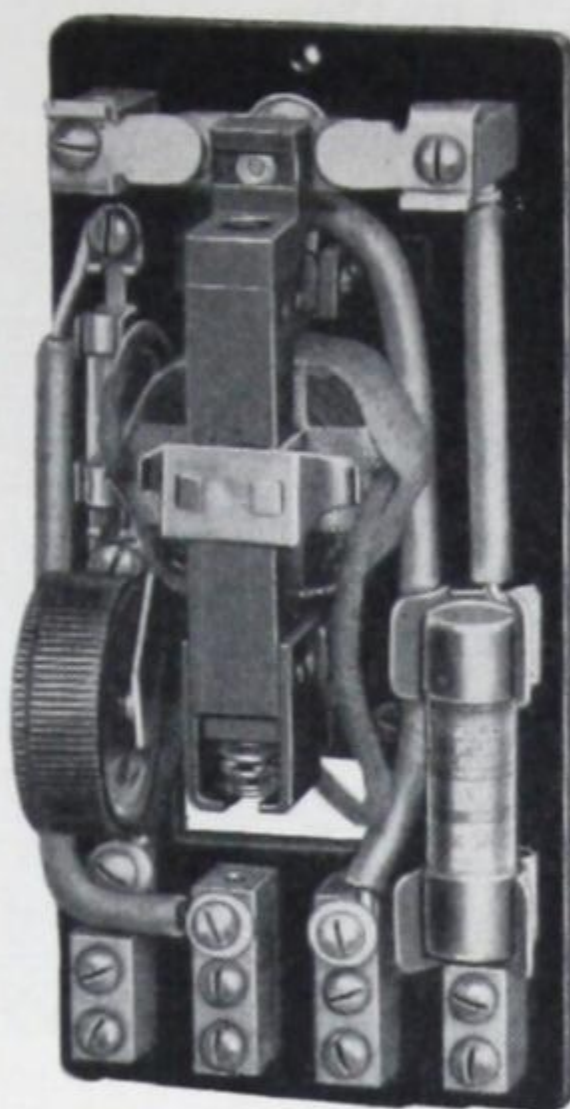


Fig. 2
(Photograph 488506)
CR7843-A Novalux
switch, internal
mechanism, normally
closed type

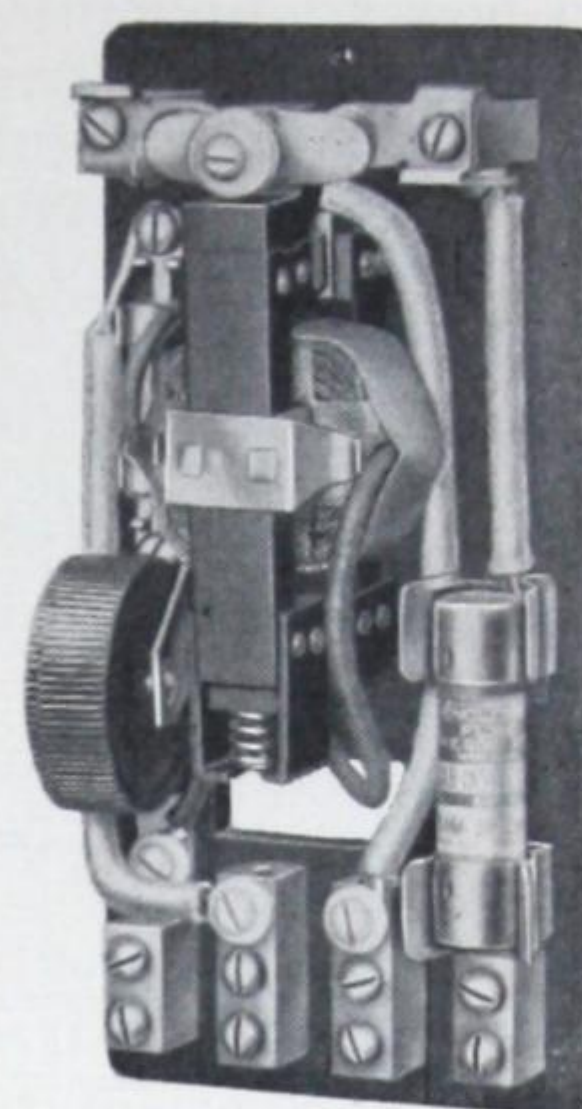


Fig. 3
(Photograph 488507)
CR7843-A Novalux
switch, internal mechanism,
normally open type

APPLICATION

SERVICE

Single-pole, single-throw magnetic switch for one or more lamps on one low-voltage multiple circuit. For remote control by pilot wire or cascade connection. For indoor or outdoor mounting, on pole or in base of ornamental standard.

FORMS AVAILABLE

Normally open type—contacts open when coil is de-energized.

Normally closed type—contacts closed when coil is de-energized.

With or without this optional equipment:

30-amp load circuit fuse.

2-amp coil circuit fuse.

Carbon-block lightning arrester on coil circuit.

Thyrite arrester on coil circuit (alternative with carbon-block arrester for surge voltage protection).

CAPACITY

30-amp normal lamp current at 125-volt a-c, any frequency. Inrush capacity up to 15 times normal current.

ADVANTAGES

EASY INSTALLATION

1. Die-cast weatherproof case eliminates additional housing.
2. Slotted lugs on sides and bottom, and $\frac{5}{16}$ -in. hole in the top, permit any practical method of mounting.

3. Individual rubber bushings line up connecting leads with terminals, and facilitate connections.
4. Heavy brass terminal blocks are drilled for No. 4 (Awg) conductor and provided with two binding screws.
5. Low inrush operating coil minimizes size of control circuit conductors.

RELIABLE OPERATION

1. Simple mechanism has no parts likely to stick because of rusting or getting out of alignment.
2. Large silver-alloy contacts designed for full-rated lamp load, with roll wiping movement when closing, protect against fusing or burning.
3. Low inrush current to coil minimizes line drop; aids quick positive action.
4. Self-contained lightning arresters of simple design, and fuses for both load and coil circuits afford desirable protection.
5. Cadmium-plated brass or bronze terminals, clips, screws, etc., resist corrosion and insure good contacts.
6. Die-cast alloy case, with screw-clamping cover and cork gasket, completely protects internal mechanism from the weather.

LOW MAINTENANCE COST

1. Entire mechanism easily removed from the case for repairs, if necessary, without dismantling the case.

G-E NOVALUX REMOTE-CONTROL SWITCHES

2. Coil and contacts can be removed and replaced quickly, using only a screw-driver.
3. Low power consumption—only 2.25 watts at 125 volts, 60 cycles.

CONSTRUCTION

MAGNET

1. Simple E shape.
2. Knife-edge fulcrum is part of magnet frame.
3. Easily disassembled, if desired.
4. Accurately machined faces and shading coil prevent noise.
5. Spring and gravity opening.

COIL HOLDER

1. Cadmium-plated brass.
2. Holds coil firmly, but is easily removable.
3. Also serves as armature stop.

OPERATING COIL

1. Layer wound, for maximum insulation between turns.
2. Low wattage and inrush (see table, page 259).
3. Can be obtained for any voltage or frequency.

CONTACTS

1. Special silver alloy and large surface withstand high-load inrush current.
2. Ample size for inrush of 15 times normal 30-amp lamp current.
3. Contacts are welded to brackets and arms.
4. Stationary brackets are firmly screwed to posts on the insulated panelboard.
5. Moving contact bar floats on rectangular guide and cannot get out of alignment.
6. The moving contacts and contact bar are shaped to provide a rolling motion as the contacts close. This prevents any tendency to fuse.

FUSES

1. A standard 30-amp cartridge fuse for the load circuit, in cadmium-plated bronze clips, available as an optional feature.
2. A 2-amp glass-enclosed cartridge fuse in series with the operating coil, in cadmium-plated clips, obtainable as an optional feature.
3. Fuses easily removed and inserted with a fuse puller.

LIGHTNING ARRESTERS

1. A carbon-block telephone-type lightning arrester to protect the operating coil against surge voltage on the pilot wire is obtainable as an optional feature.
2. Carbon arrester is connected between one coil lead and the case.
3. Consists of a small gap between two blocks of carbon.
4. Carbons are easily removed from clips for cleaning and inspection after operation.
5. The Thyrite lightning arrester, used exclusively on the General Electric Novalux line of switches, is available as an alternative equipment.
6. This is a recently designed G-E material for lightning protection now coming into widespread use on all power circuits.
7. Consists of a gap in series with a Thyrite arrester disk, the unit enclosed in a molded composition case and mounted in clips.
8. It is connected directly across the operating coil.
9. This arrester has important advantages over every other type: great overload capacity and self-healing characteristics. It offers a very low impedance to surge voltage, but a very high impedance to normal working voltage.

TERMINALS

1. Made of heavy brass, cadmium plated.
2. Drilled with 0.196-in. hole taking up to No. 4 solid conductor.
3. Each has two screws for firmly clamping the conductors.
4. Accurately lined up with bushings in the case.

PANELBOARD

1. All internal parts assembled on $\frac{1}{4}$ -in. insulating panelboard.
2. The entire mechanism mounted in the case by three screws with lockwashers.
3. Mechanisms are interchangeable between cases.

HOUSING

1. Made of die-cast alloy, noncorrodible and durable.
2. Lugs on sides and bottom and a hole in the top (concealed by the cover) permit mounting on the horizontal or vertical axis with $\frac{1}{4}$ -in. bolts or screws.

G-E NOVALUX REMOTE-CONTROL SWITCHES

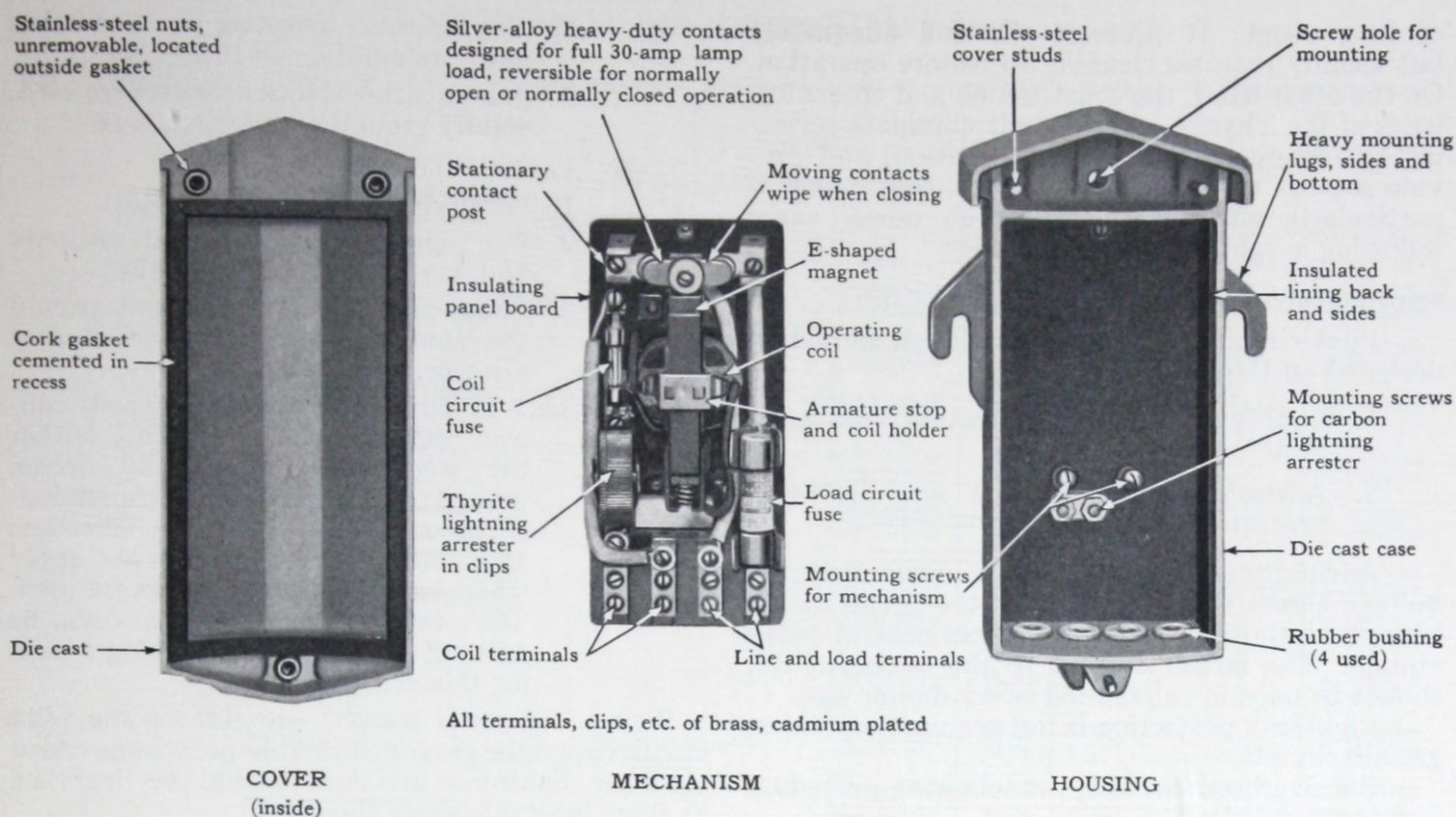


Fig. 4
(Photograph 488508)
CR7843-A Novalux multiple switch, open type

3. Ornamental and distinctive in appearance.
4. Cover nuts and studs are stainless steel, located outside of the gasket so that the mechanism is completely protected when the cover is in place.
5. The cover nuts are nonremovable.
6. A heavy cork gasket, cemented in a recess in the cover, cannot get out of place.
7. Four rubber bushings in the bottom of the case have $\frac{7}{32}$ -in. holes for the leads, and line up with the terminals on the panel.

RECOMMENDATIONS

SELECTION

For the so-called "cascade" connection (Fig. 5) and similar relaying requirements, the normally open type of switch is recommended.

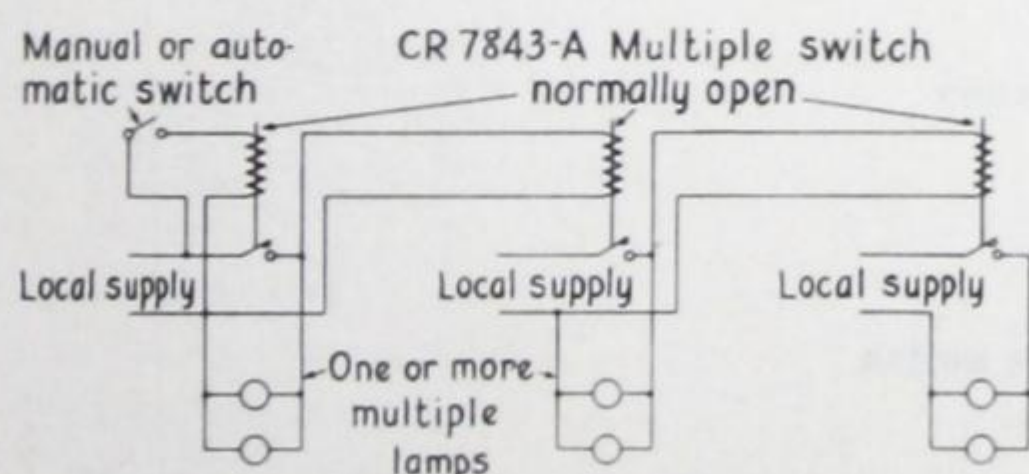


Fig. 5
Diagram of typical "cascade" connection of
CR7843-A Novalux multiple switch
Fuses and lightning arresters not shown.

For pilot-wire control (Fig. 6), either normally open or normally closed switches can be used. A normally closed type is commonly used as it will turn on the load in the event of pilot-supply or circuit failure.

The load-circuit fuse is recommended for all applications to protect line and switch against load short circuit.

The coil-circuit fuse is recommended for all applications, particularly on aerial pilot circuits. It protects the switch coil against surge currents and clears the circuit in case of coil short circuit.

The use of a lightning arrester to supplement the coil fuse is recommended where switch is connected to aerial lines or pilot circuit. The Thyrite arrester, available at a slight extra cost, is recommended because of its self-healing characteristics. The use of either lightning arrester will improve continuity of service at low cost. The carbon-block lightning arrester has stood the test

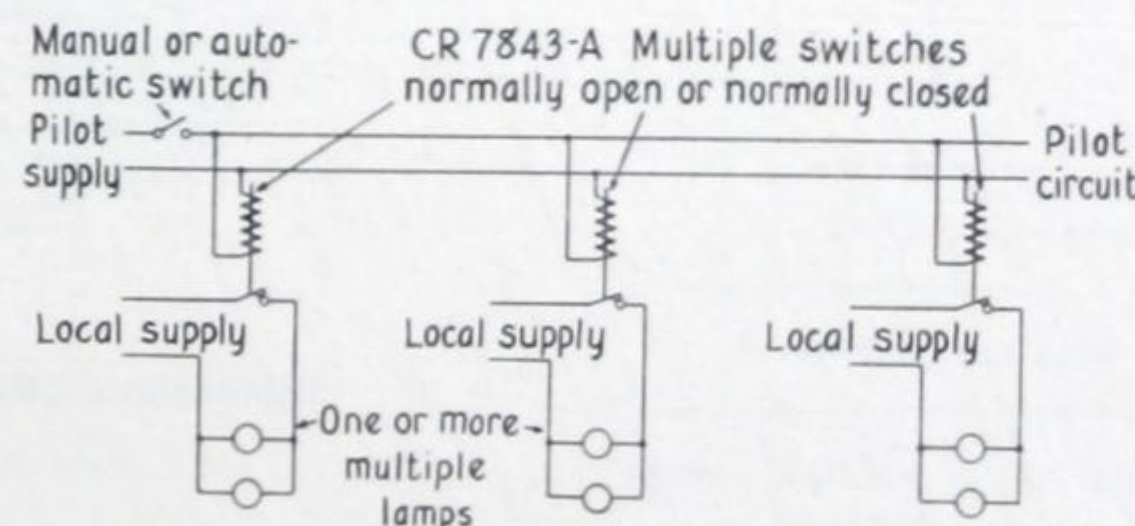


Fig. 6
Diagram of typical "pilot circuit" connection of
CR7843-A Novalux multiple switch
Fuses and lightning arresters not shown.

G-E NOVALUX REMOTE-CONTROL SWITCHES

of long usage. It protects the coil adequately but usually requires cleaning to restore operation. On the other hand, the construction and characteristics of the Thyrite arrester unit eliminating servicing to restore normal switch operation, and provide a path to only surge voltages, that makes it particularly effective. There is no power surge following a lightning discharge.

PILOT-CIRCUIT CONSTRUCTION

Pilot circuits, where contemplated, should be designed on the basis of:

1. Supply of adequate operating voltage to switch coils.
2. Adequate surge voltage and lightning protection.

Adequate voltage supply is assured if the voltage across the last switch on the circuit at the instant of starting is at least 60 per cent of rated voltage. The inrush current to the operating coil should be used in calculation of conductor size.

Lightning protection is not required on underground circuits.

For overhead circuits, the following procedure is recommended:

- (a) For wood-pole line:
 1. Ground neutral leg of pilot circuit.

2. Use lightning arresters in all switches and, preferably, coil fuses also.
3. Where carbon-block arresters are used, solidly ground each switch case.

(b) For steel pole line:

1. Ground neutral of pilot circuit.
2. Use lightning arresters in all switches and, preferably, coil fuses, also.
3. Ground each switch case and ground the neutral connection at each case also; or, alternatively:

3A. If Thyrite arresters are used, connect neutral wire to ground (either the steel pole or specially driven ground rod) through compression-chamber neutral lightning arresters. *Important Note.*—This does not apply where carbon-block arresters are used. The switch case must always be grounded to provide a leakage path for this arrester.

Where, for some reason, one side of the pilot circuit cannot be grounded, double-pole compression chamber lightning arresters should be installed at short intervals along the circuit.

Failure to provide adequate lightning protection will usually result in service interruptions and maintenance expense.

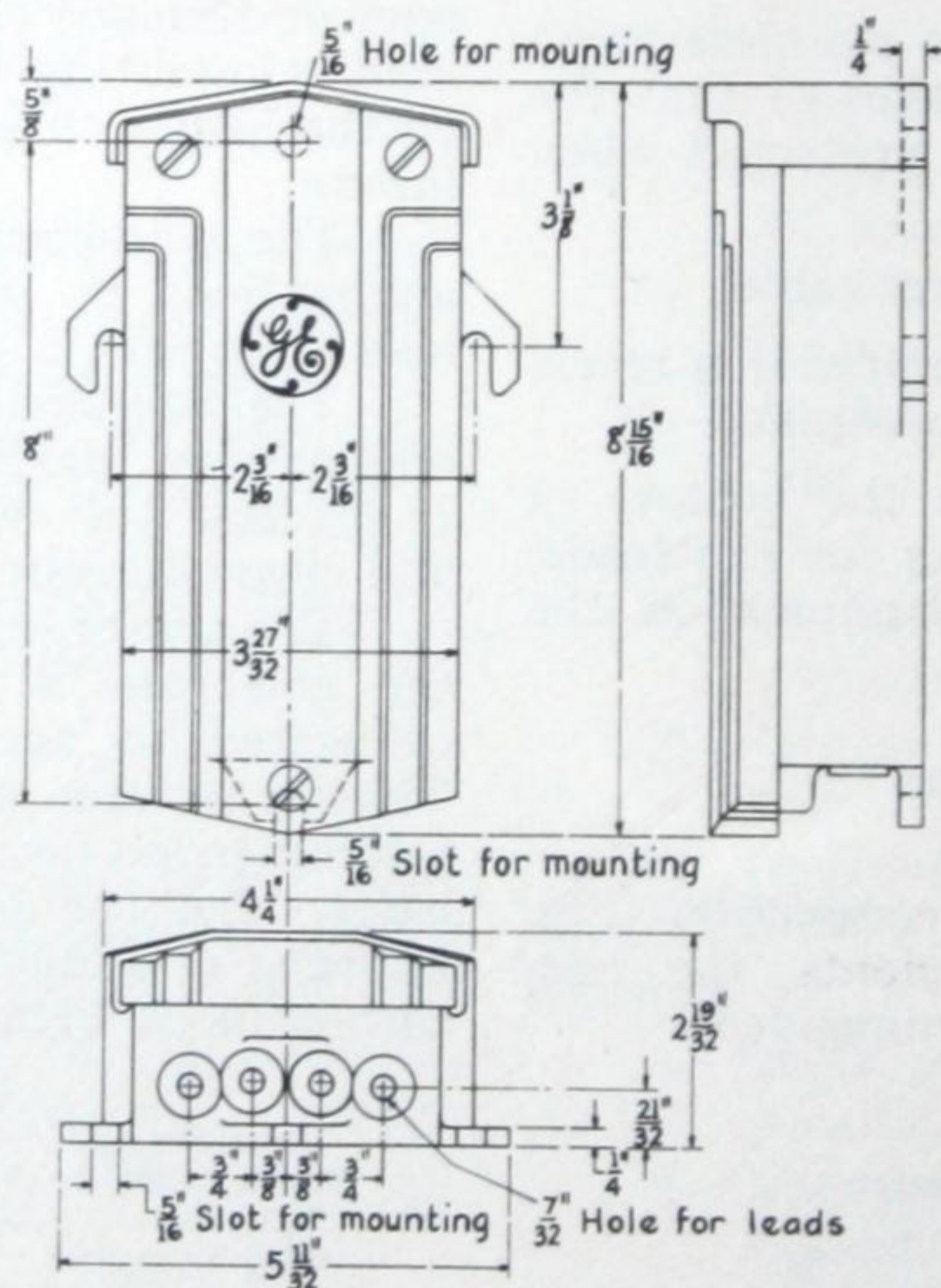


Fig. 7
(K-4959836)
Dimensions CR7843-A Novalux multiple switch

G-E NOVALUX REMOTE-CONTROL APPARATUS

CR7843-A, 30-AMP MULTIPLE SWITCHES

TYPE CR7843-	DE-ENERGIZED POSITION OF CONTACTS		EQUIPMENT				RATING	CAT. NO.	LIST PRICE Class GO-51	APPROX SHIP WT in Lb	SUPERSEDES TYPE	WIRING DIAGRAM
	Norm. Open	Norm. Closed	2-amp Coil Fuse	30-amp. Load Fuse	Thyrite Light- ning Arrester	Carbon Light- ning Arrester						
A1A A2A	X	X	X	X	X	—	Coil: 125 Volts 60 Cycles A-c Load: 30 Amp at 125 Volts A-c Spst	4980200G2 4980209G2	\$37.40 37.40	10 10	.....	K-4959583 K-4959583
A1B A2B	X	X	X	—	X	—		4980201G2 4980210G2	36.20 36.20	10 10	.....	K-4959583 K-4959583
A1C A2C	X	X	—	X	X	—		4980202G2 4980211G2	36.20 36.20	10 10	.....	K-4959583 K-4959583
A1D A2D	X	X	X	X	—	—		4980203G2 4980212G2	30.40 30.40	10 10	.....	K-4959584 K-4959584
A1E A2E	X	X	—	X	—	—		4980204G2 4980213G2	29.20 29.20	10 10	.....	K-4959584 K-4959584
A1F A2F	X	X	—	—	—	—		4980205G2 4980214G2	28.00 28.00	10 10	CR7843-C9 CR7843-C8	K-4959584 K-4959584
A1G A2G	X	X	X	X	—	X		4980206G2 4980215G2	33.40 33.40	10 10	.....	K-4959582 K-4959582
A1H A2H	X	X	X	—	—	X		4980207G2 4980216G2	32.20 32.20	10 10	.....	K-4959582 K-4959582
A1J A2J	X	X	—	X	—	X		4980208G2 4980217G2	32.20 32.20	10 10	.....	K-4959582 K-4959582
A1K A2K	X	X	—	—	—	X		4387875G2 4387876G2	31.00 31.00	10 10	CR7843-C7 CR7843- { C5 C6	K-4959582 K-4959582

OPERATING COIL DATA—CR7843-A, ALL FORMS

VOLTS	CYCLES A-c	CONTINUOUS AMP	INRUSH AMP	WATTS
125	60	.045	.15	2.25

CONNECTIONS

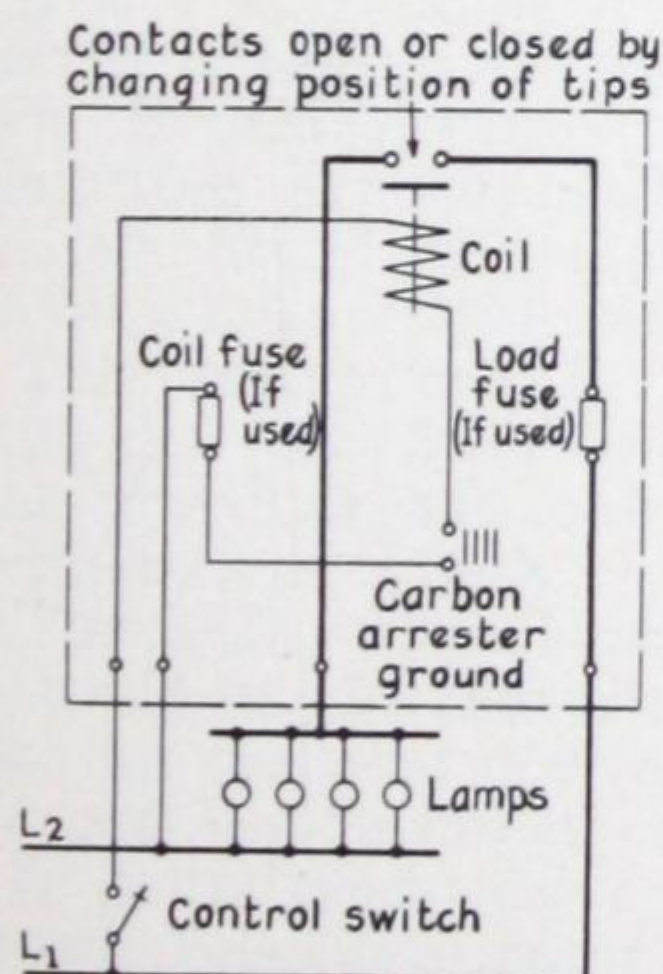


Fig. 8
(K-4959582)
CR7843-A1

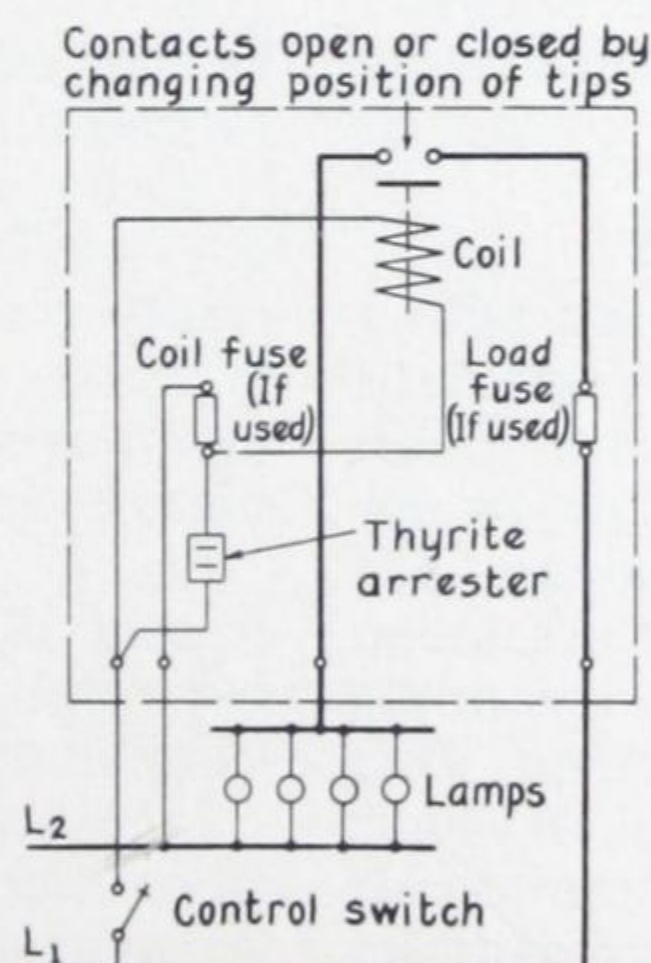


Fig. 9
(K-4959583)
CR7843-A1A

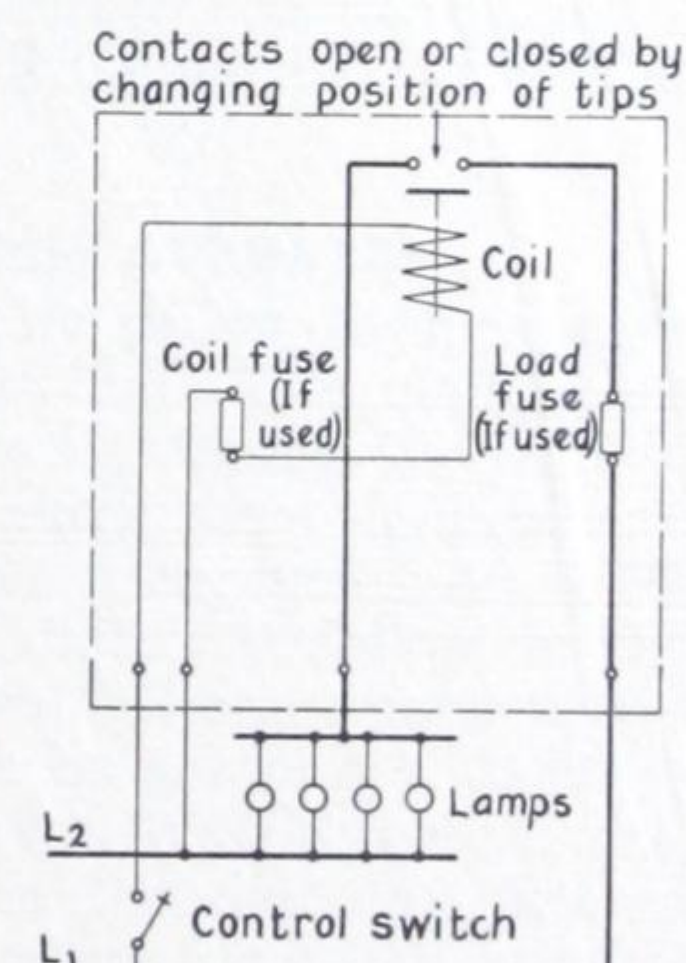


Fig. 10
(K-4959584)
CR7843-A1D

G-E NOVALUX REMOTE-CONTROL APPARATUS

CR7843-A, 30-AMP CAPACITY

For Operation from Series Lighting Circuits with Type IL Transformer

TYPE CR7843-	DE-ENERGIZED POSITION OF CONTACTS	EQUIPMENT	RATING	CAT. NO.	LIST PRICE Class GO-51	APPROX SHIP. WT in Lb
A1E A2E	Norm. open Norm. closed	30-amp load fuse 30-amp load fuse	Coil: 6.6 amp, 60 cycles; Load: 30 amp at 125 volts A-c, Spst	4980204G5	\$29.20	10
				4980213G5	29.20	10
A1F A2F	Norm. open Norm. closed	None None		4980205G5	28.00	10
				4980214G5	28.00	10

IMPORTANT NOTE:—This type of switch must be insulated from the series circuit with a Type IL Transformer.

Any standard, 60-cycle, single-light, Type IL transformer with 6.6-amp secondary can be used—for example, Cat. No. 4X565; Cat. No. 4X571; Cat. No. 4X577; or Cat. No. 18X834.

For price of switch with special coil for other series-circuit current or frequency, refer to the nearest sales office.

APPLICATION

This is a simple and economical method of controlling a multiple lighting circuit from a series street-lighting circuit. Alley-lighting, sign or flood-lighting, or isolated multiple street or bridge lighting are representative applications.

The Type IL transformer can be installed near the series circuit, and the switch near the load to be controlled. No. 8 Awg conductors, or larger, should be used between transformer and switch coil.

ADVANTAGES

SAFETY

Only low voltage in the switch, safeguarded by the ample insulation of the IL transformer.

No oil.

RELIABILITY

Standard equipment of proved reliability used.

Transformer protects switch from surges on the series circuit.

Each element is especially designed for its service; the transformer for supply of low voltage from a series circuit, and the switch for the control of multiple lighting loads.

CONVENIENCE

Transformer and switch installed separately at most convenient locations.

LOW COST

Based on standard listed equipment of modern design in regular production for street-lighting service.

This combination supersedes the CR7840-1334 series-multiple switch, which is no longer regularly produced, and which was formerly listed at a substantially higher price.

GENERAL-PURPOSE AUTOMATIC TIME SWITCHES

Types T-17 and T-27

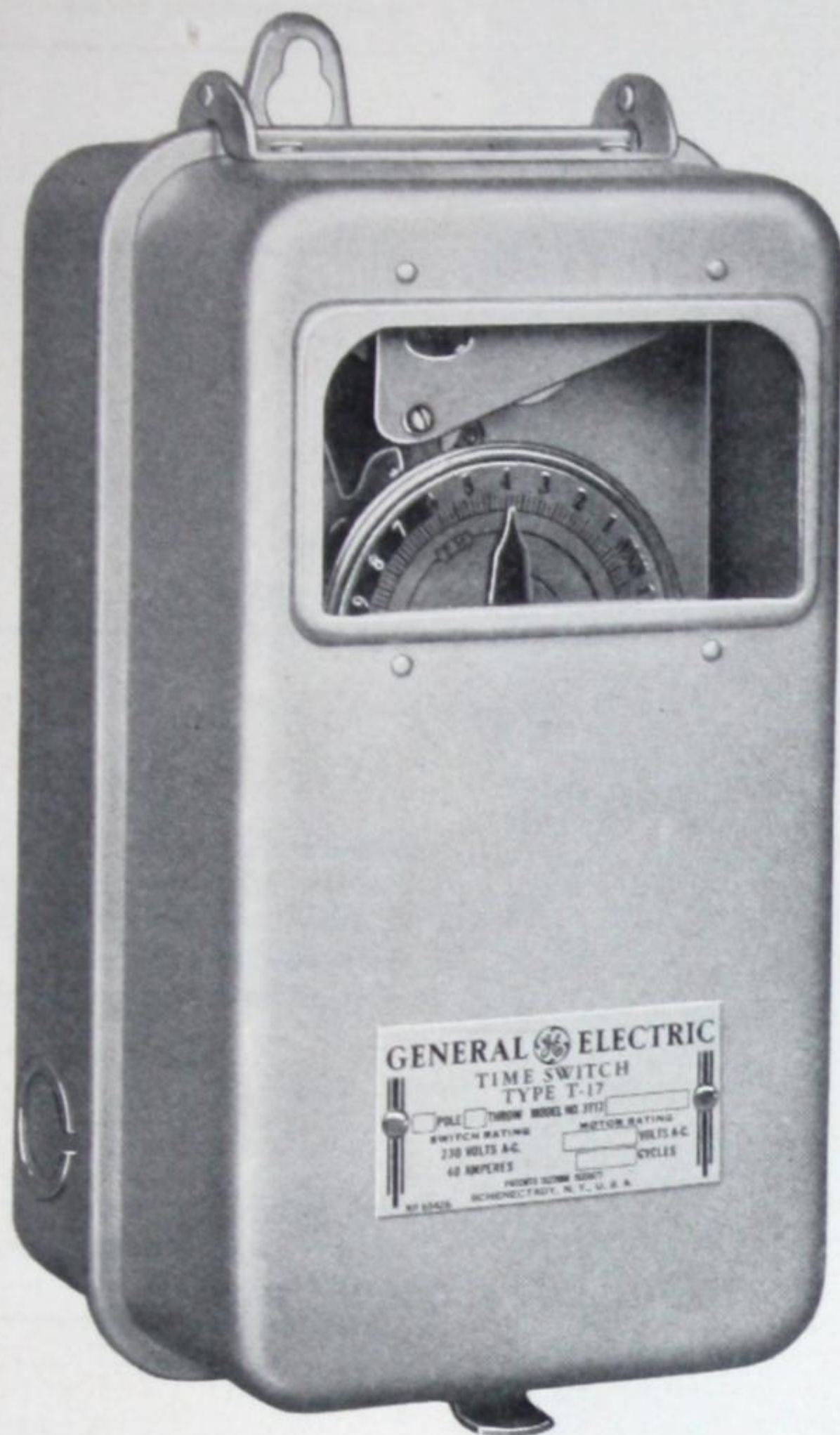


Fig. 1
Type T-17

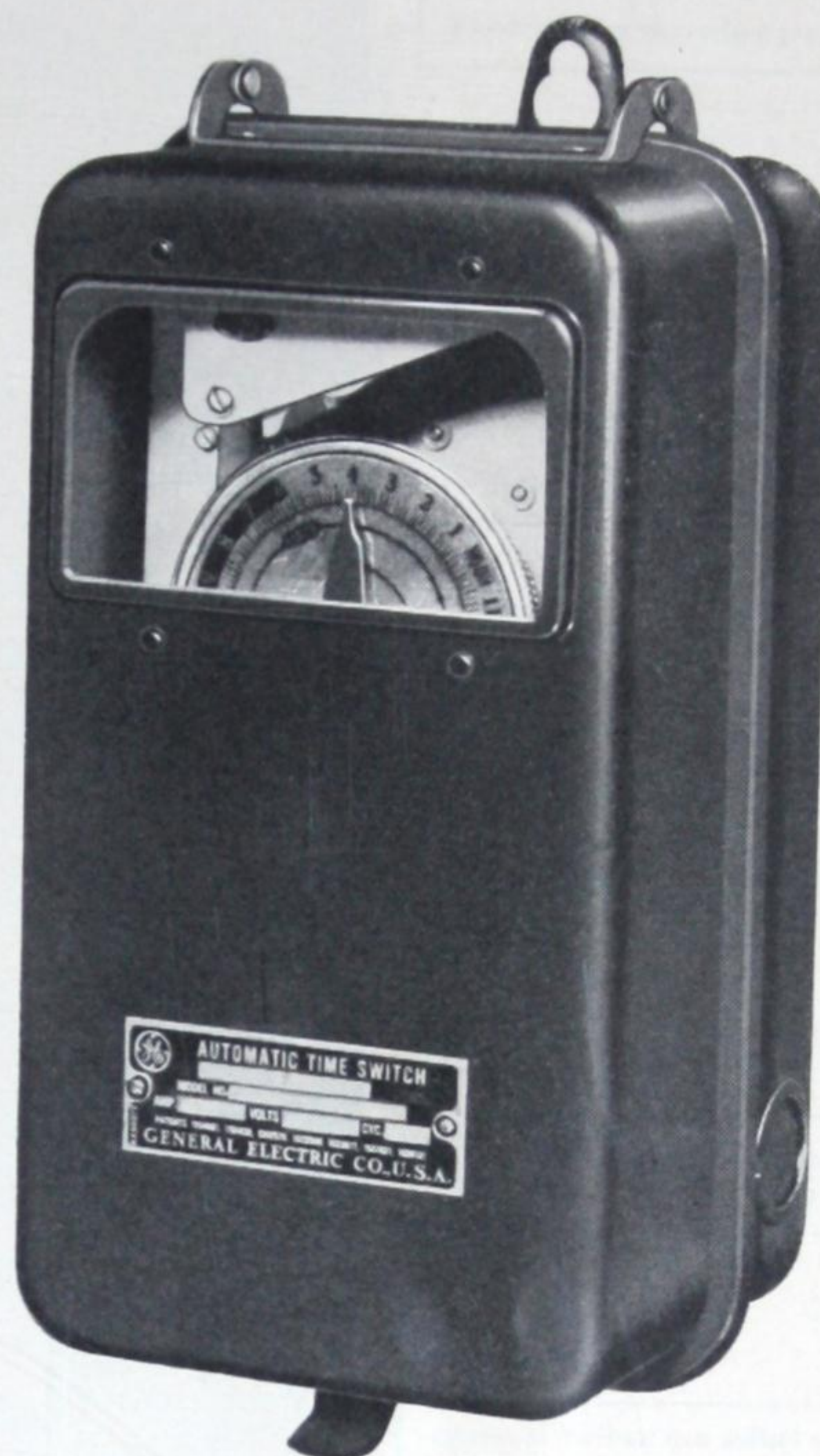


Fig. 2
Type T-27

The T-17 time switch will control almost any electric circuit on a schedule related to the time of day. It will perform any practical number of operations per day and skip a day or more if desired. Standard switches are designed for a-c circuits, 115 and 230 volts, 40 amperes per contact.

This switch can be furnished with either a plain dial (for fixed-time settings) or astronomic dial (for dusk and dawn schedules) and certain combinations of both.

The T-27 switch is similar to the T-17 except that it is only for indoor service and is not equipped with an omitting device for Sunday and holiday cutouts. It is furnished only in the listed ratings.

In both types, drive is direct from the well-known Telechron motor through a compact spur-gear train. The switching mechanism is unusually simple and operates the quick-make and quick-break silver contacts. Installation is easy, and is made without removing the mechanism from the case.

These G-E time switches are economical automatic control devices that will give years of reliable service.

HOW THE SWITCH OPERATES

The switch is operated by riders clamped with thumbscrews to the time dial. The clamps, or riders, are so designed that tightening the thumbscrews with the fingers secures them definitely to the specially prepared dial periphery. An OFF operation may be set immediately to follow an ON operation of the switch. Two ON operations or two OFF operations must not be set closer together than one hour and 45 minutes. Within these limits, there may be mounted on the dial any desired number of ON and OFF riders for a like number of ON and OFF operations of the switch.

The switch is operated by the rider engaging the tripping lever and moving it through a distance equivalent to $1\frac{3}{4}$ hours. This motion stores within the switch-operating spring sufficient energy to

GENERAL-PURPOSE AUTOMATIC TIME SWITCHES

Types T-17 and T-27

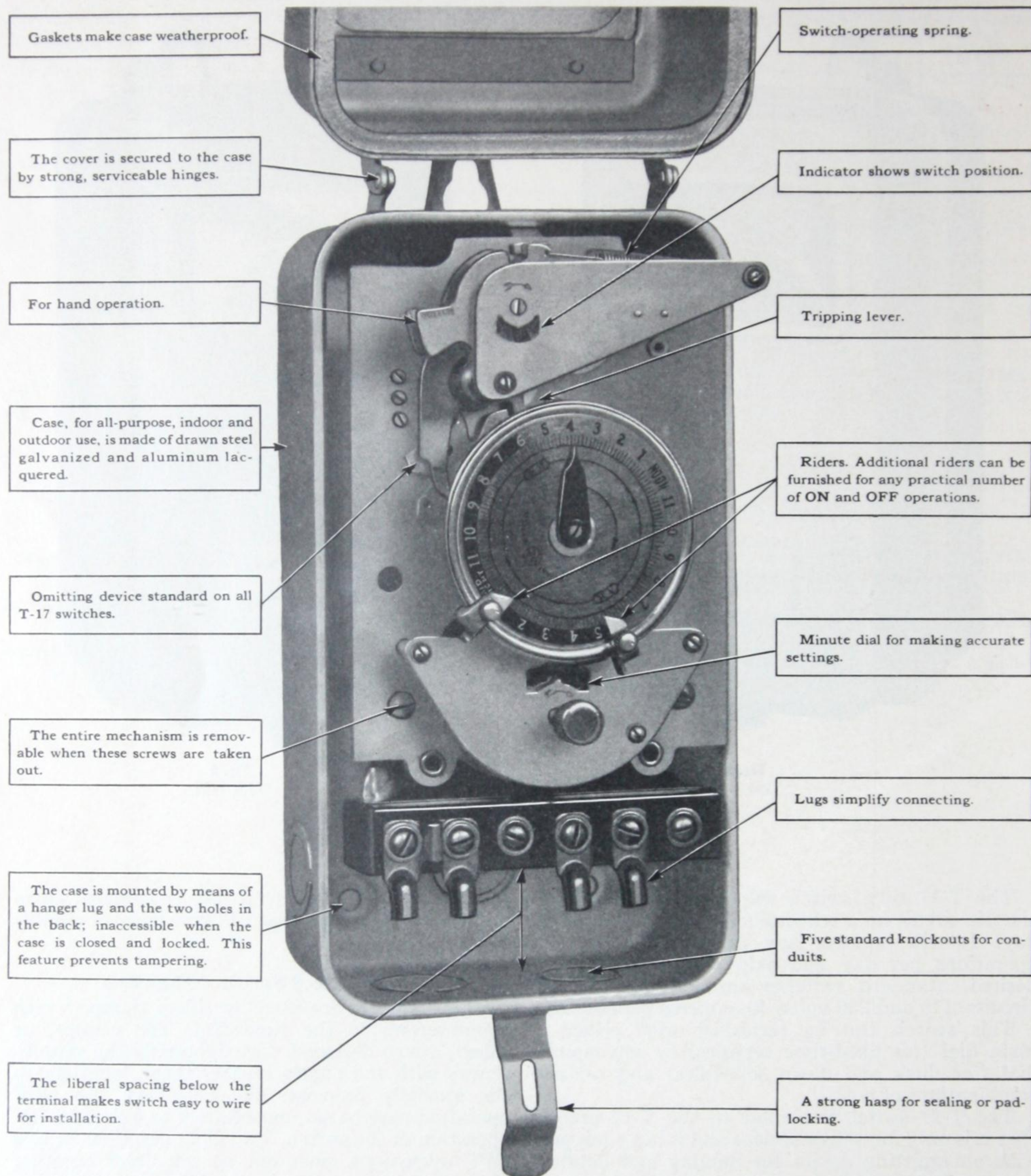


Fig. 3

G-E Type T-17 time switch. Interior view showing plain dial
 (The T-27 switch has the same appearance except that it has no omitting device or connecting lugs.)

GENERAL-PURPOSE AUTOMATIC TIME SWITCHES

Types T-17 and T-27

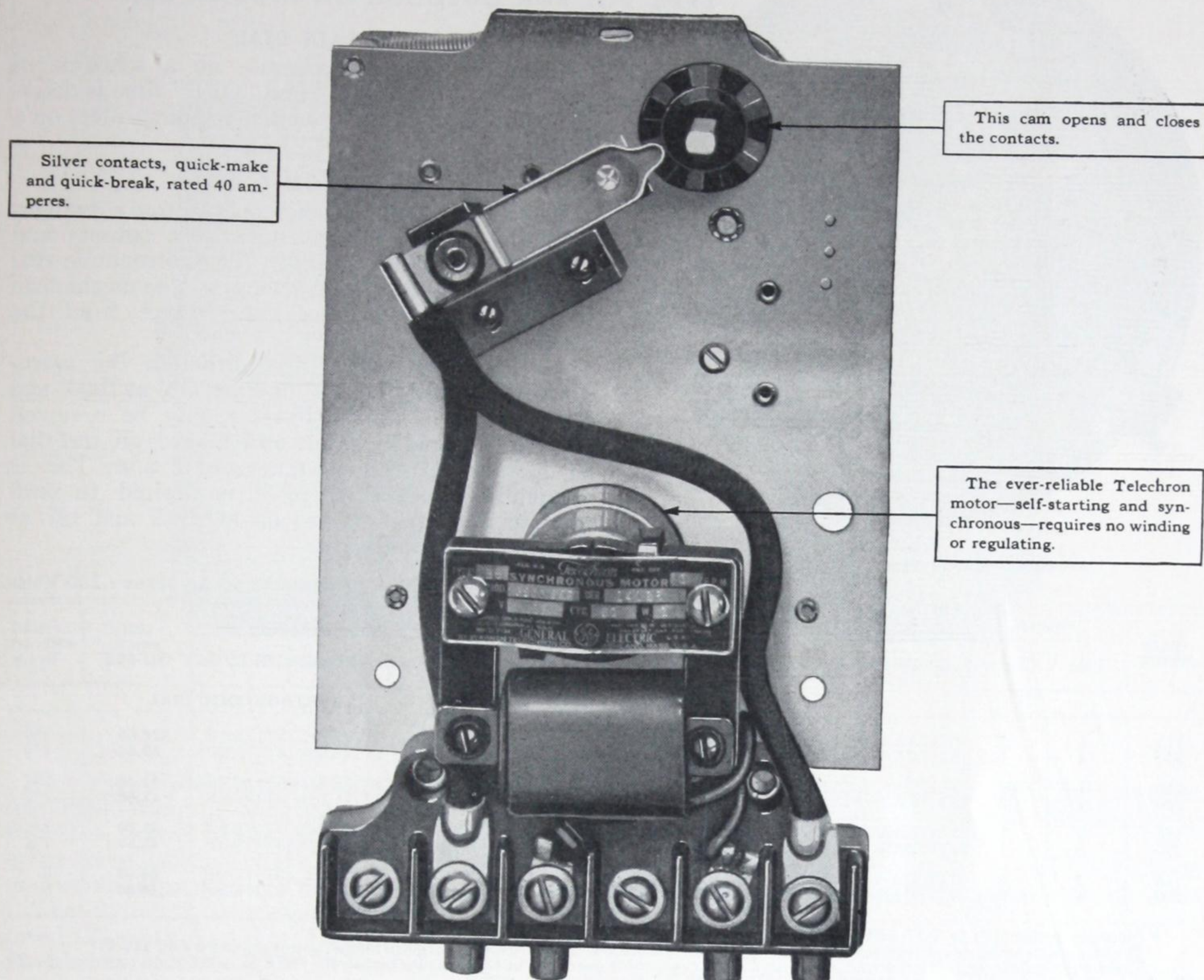


Fig. 4
G-E Type T-17 time switch, back view of mechanism

operate the switch contacts positively. When the rider leaves the tripping lever, the switch-operating spring immediately dissipates its energy in operating the switch contacts with a positive definite snap. At the same time the switch-position indicator moves to show the new switch position.

LITTLE MAINTENANCE REQUIRED

This time switch requires no regulating, adjusting, or other maintenance attention throughout its normal life. However, provision is made in the Telechron motor for extending the normally long life of the motor indefinitely by replacing its oil every two or three years. At the same time, a drop of oil in the spur-gear train will considerably lengthen the life of this unit. With this slight attention, this time switch will perform accurately and satisfactorily for many years.

SWITCH CAN SKIP A DAY OR MORE

The T-17 time switch is furnished with an omitting device. By means of this mechanism, the switch can conveniently be set to omit operations on any day in the week and to do so repeatedly. As regularly supplied, it can be set to omit operation on one, two, or three days. This is accomplished by turning in to the properly marked point of the dial wheel one of the three small screws provided. The points of the dial wheel are marked with the days of the week; and when they are so equipped with the small operating screw, switching on the marked day is omitted. Screws additional to the three normally supplied are available to omit any number of days in the week. Listed switches are arranged to omit the "on" operation. If the omitting device is used, "on" riders should not be set between 1:45 a.m. and 3:15 a.m.

GENERAL-PURPOSE AUTOMATIC TIME SWITCHES

Types T-17 and T-27

TYPE T-17 FOR OUTDOOR OR INDOOR USE*

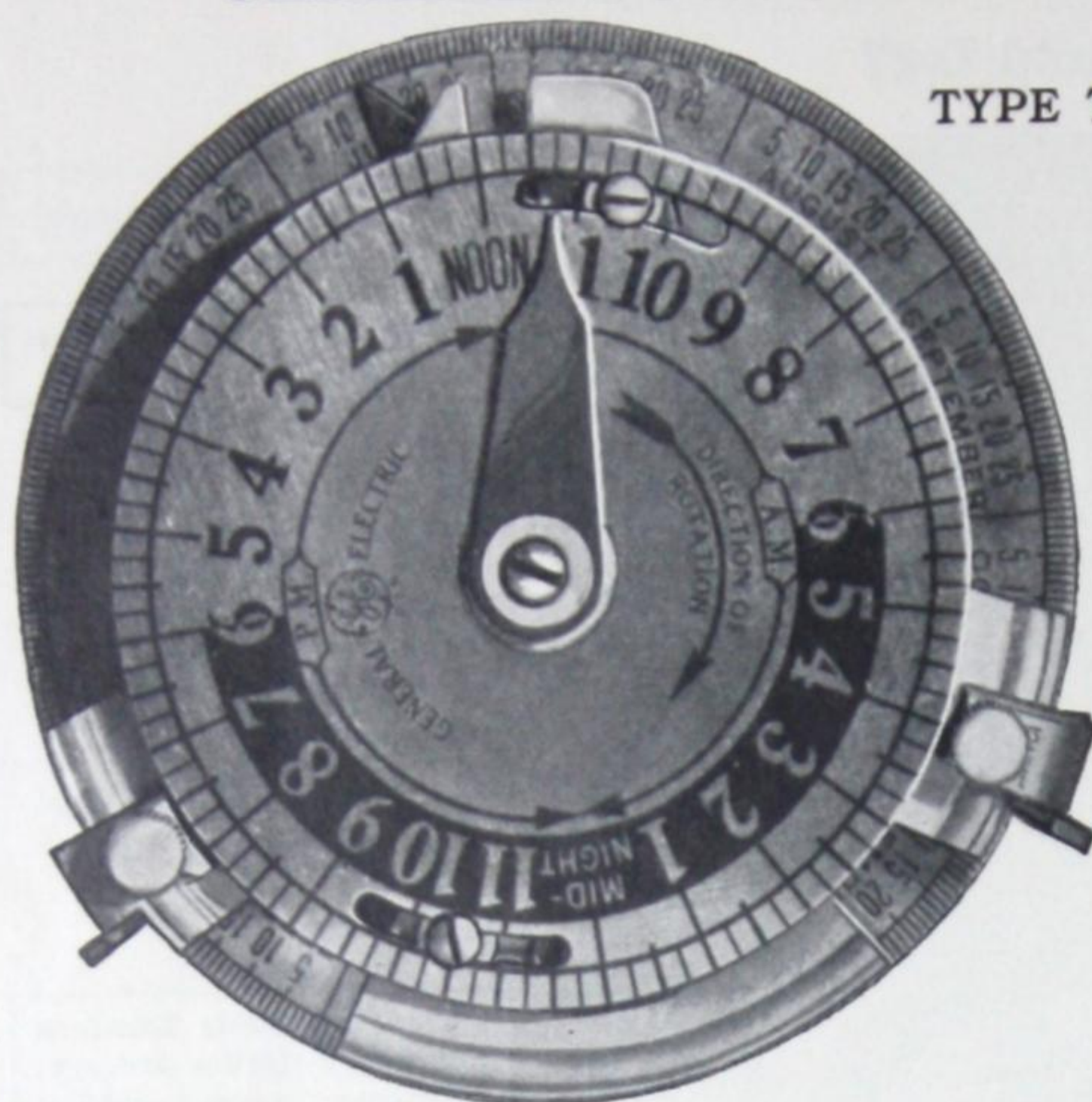


Fig. 5

Astronomic dial for Type T-17 time switch

PLAIN DIAL

Plain dial switches operate on a schedule of fixed time of day. "ON" and "OFF" time is determined by the setting of switch-tripping riders on a 24-hour dial.

ASTRONOMIC DIAL

Astronomic dial switches operate on a twilight schedule, turned ON at dusk (not sunset) and OFF at dawn (not sunrise). The astronomic dial is designed for maximum accuracy. The mechanism is driven by a spur-gear train direct from the Telechron motor.

It should be noted that although the astronomic dial is supplied to operate ON at dusk and OFF at dawn, the OFF rider may be removed from its normal position and placed on the dial to operate between 10 p.m. and 2 a.m. This is particularly useful where it is desired to turn outdoor advertising signs on at dusk and off at approximately midnight.

With Window

Contacts 40 Amperes—230 Volts

VOLTS MOTOR	SWITCH		CAT. NO.			LIST PRICE GO-89B	APPROX SHIP. WT in Lb	CAT. NO.			LIST PRICE GO-89B	APPROX SHIP. WT in Lb
	Pole	Throw	60 Cycles	50 Cycles	25 Cycles			60 Cycles	50 Cycles	25 Cycles		
			†PLAIN DIAL					‡ASTRONOMIC DIAL				
115	1	1	3T17AAA	3T17AAC	3T17AAE	\$24.00	7	3T17ABA	3T17ABC	3T17ABE	\$39.00	7 1/2
230	1	1	3T17AAB	3T17AAD	3T17AAF	24.00	7	3T17ABB	3T17ABD	3T17ABF	39.00	7 1/2
115	1	2	3T17CAA	3T17CAC	3T17CAE	26.50	7 1/4	3T17CBA	3T17CBC	3T17CBE	41.50	7 3/4
230	1	2	3T17CAB	3T17CAD	3T17CAF	26.50	7 1/4	3T17CBB	3T17CBD	3T17CBF	41.50	7 3/4
115	2	1	3T17BAA	3T17BAC	3T17BAE	26.50	7 1/4	3T17BBA	3T17BBC	3T17BBE	41.50	7 3/4
230	2	1	3T17BAB	3T17BAD	3T17BAF	26.50	7 1/4	3T17BBB	3T17BBD	3T17BBF	41.50	7 3/4
115	2	2	3T17DAA	3T17DAC	3T17DAE	29.00	7 1/2	3T17DBA	3T17DBC	3T17DBE	44.00	8
230	2	2	3T17DAB	3T17DAD	3T17DAF	29.00	7 1/2	3T17DBB	3T17DBD	3T17DBF	44.00	8

* Omitting device built in T-17 switches. Purchaser use is optional.

The above time switches are operated by a 2-watt B-8 motor and are recommended for operation in temperature ranges of 0 F to 110 F.

These switches can be furnished equipped with a 6-watt motor for operation in temperature ranges of -20 F to +110 F. In ordering specify "Similar to Cat. No. except for -20 F to +110 F." No increase in price.

† When more than two operations per day are required on PLAIN-DIAL switches order additional sets of riders (one "on" and one "off" per set). Up to three sets of riders per switch no additional charge. All over three sets per switch will be charged at \$0.20 net per set.

‡ When ordering astronomic-dial switches, specify city or town in which the switches are to be used. Above prices are for standard astronomic schedules (civil twilight).

For Type T-17 time switches furnished without cases, deduct \$3.50 list from above prices.

External knobs for manual operation of either "on" or "off", add \$1.00 list. Knobs for both "on" and "off", add \$1.50 list.

TYPE T-27—FOR INDOOR USE

The Type T-27 time switch is similar to the T-17 time switch except that its steel case is lacquered gun metal and is not weatherproof. This switch should be mounted only indoors. The T-27 is not equipped with an omitting device for Sunday and holiday cutouts. It does, however, have

the same terminal block as the T-17. The T-27 switch is furnished in a limited number of ratings as shown below, and it will be seen that the prices are lower than for the T-17. Except for these differences the T-27 switch is identical with the T-17 and will give the same reliable long-time service.

With Window

Contacts 40 Amperes—230 Volts A-c

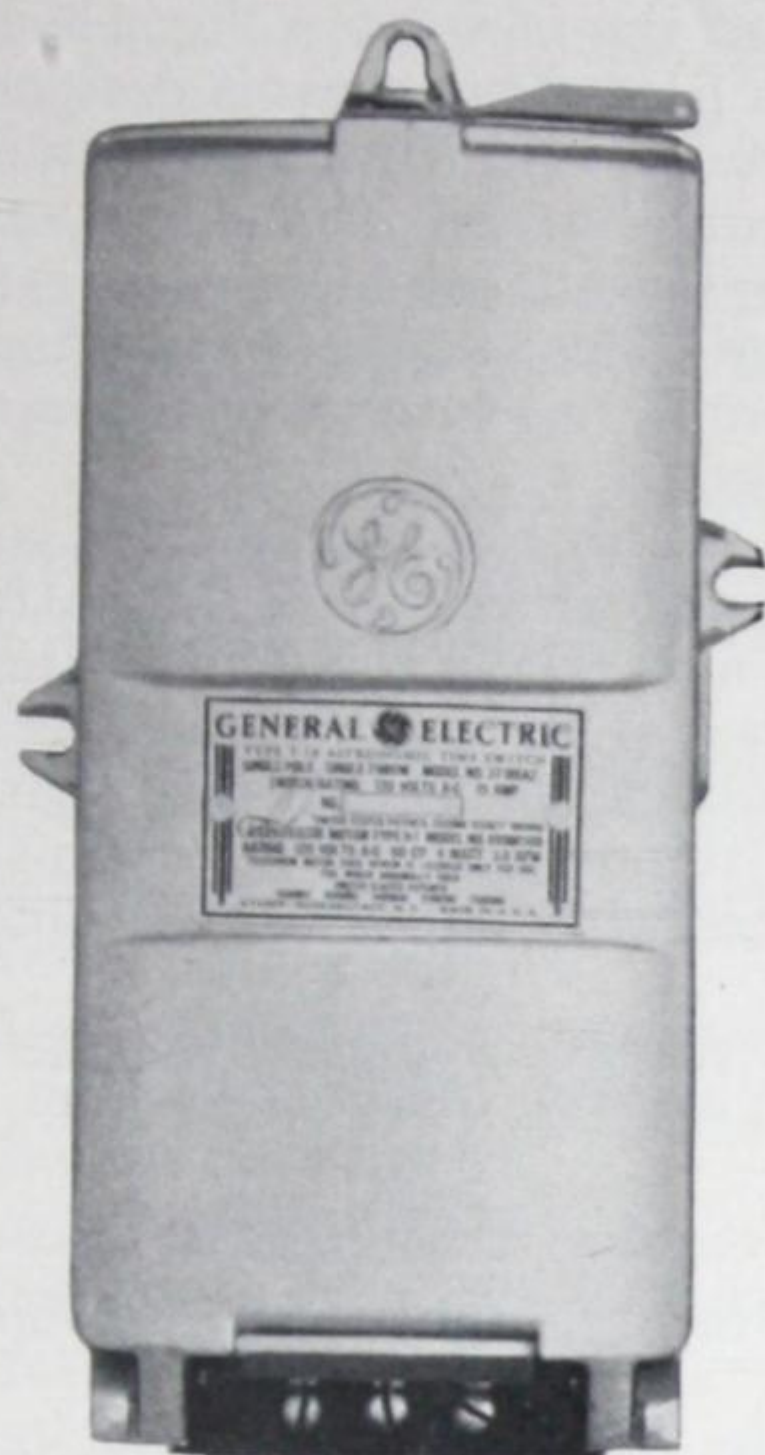
VOLTS MOTOR	SWITCH		CAT. NO.			LIST PRICE GO-89B	APPROX SHIP. WT in Lb
	Pole	Throw	60 Cycles	50 Cycles	25 Cycles		
115	1	1	3T27AAA	3T27AAC	3T27AAE	\$20.00	7
230	1	1	3T27AAB	3T27AAD	3T27AAF	20.00	7
115	1	2	3T27CAA	3T27CAC	3T27CAE	22.50	7 1/4
230	1	2	3T27CAB	3T27CAD	3T27CAF	22.50	7 1/4
115	2	1	3T27BAA	3T27BAC	3T27BAE	22.50	7 1/4
230	2	1	3T27BAB	3T27BAD	3T27BAF	22.50	7 1/4

Extra riders for additional operations per day same as T-17.

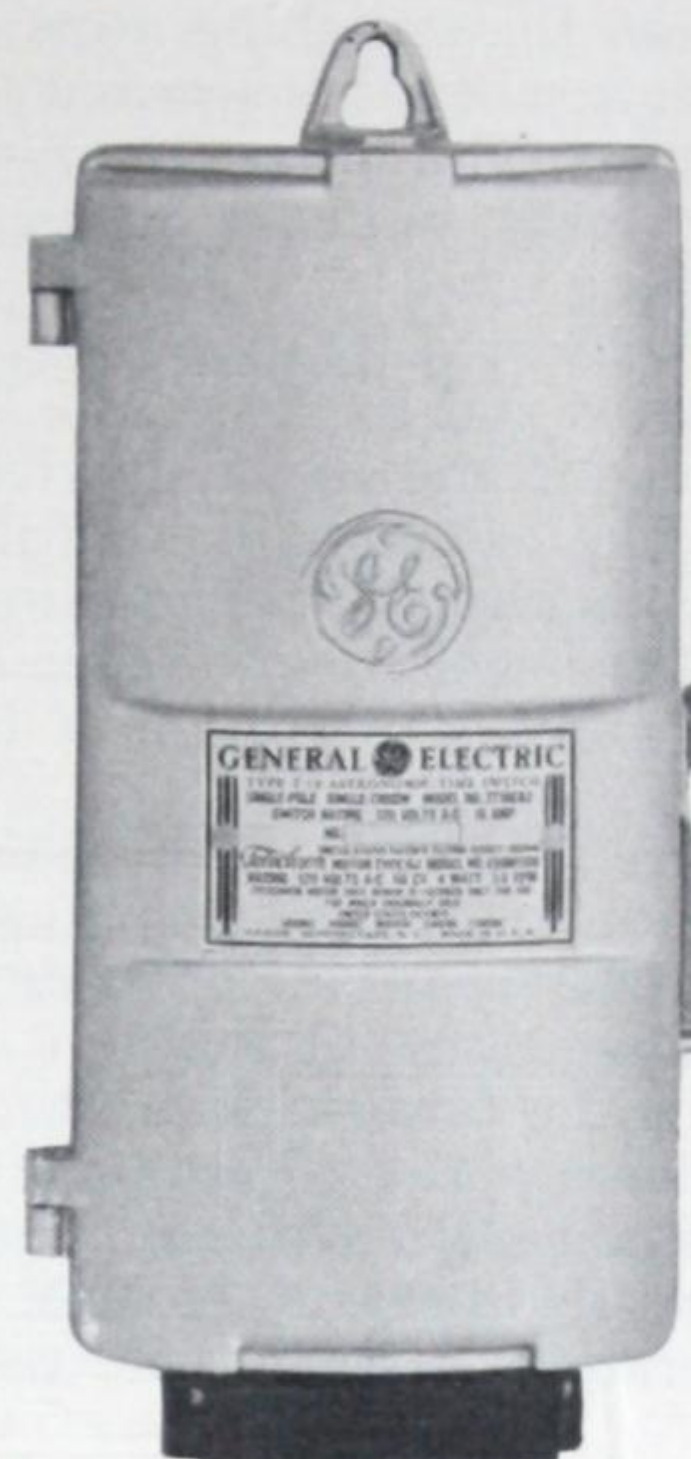
Dimensions: 10 1/2 by 4 1/8 by 5 1/8 inches, overall.

POLE-BASE-TYPE AUTOMATIC TIME SWITCHES

Type T-18



Model 3T-18BA2



Model 3T-18EA2

The Type T-18 time switch is designed primarily for installation in the base of a street-lighting standard, but it is also particularly adaptable for other installations where minimum space is a major requirement.

The switch is single-pole single-throw and is rated 120 volts, 60 cycles, 15 amperes. It is suitable for MAZDA, resistance, or inductive loads.

The switch is designed to control a street-lighting circuit according to a predetermined astronomical schedule. The time of day is indicated by a minute dial and a twenty-four hour dial, and the date by a calendar dial.

The complete device consists of four sub-assemblies in a drip-proof and dust-tight die-cast housing with provisions for mounting on a steel pole in the base of a lamppost.

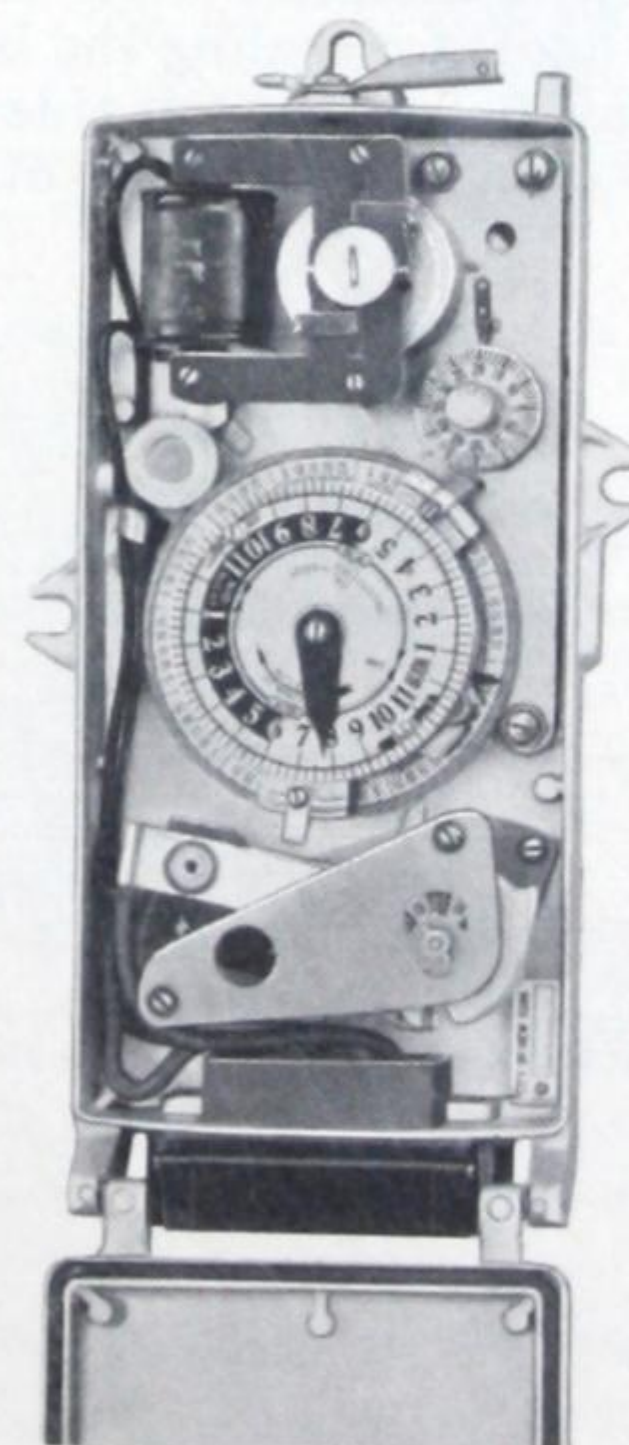
ASTRONOMIC DIAL

The astronomic dial is so constructed that after it is assembled and adjusted, the tripping schedule cannot change. The schedule is determined by two cams, one for the turning-on time and one for the turning-off time, accurately cut to the predetermined schedule. By a simple linkage the cam followers are connected to the tripping arms and cause these arms to move through the proper angle each day, thus changing the time at which the lights are turned on or off.

A red pointer on the front of the twenty-four-hour dial indicates the time of day. The time is

indicated at the bottom of the dial. For accurate setting or reading the minute dial should also be referred to.

The twenty-four-hour dial is divided into fifteen minute periods. These markings are on the outer

Interior of T-18 time switch
(cover removed)

POLE-BASE-TYPE AUTOMATIC TIME SWITCHES

Type T-18

edge of the dial and also serve as a means of locating the riders on the switching arms and particularly as a measure when it is necessary to move the riders on the arms. The riders are adjustable up to approximately forty minutes either side of the scheduled tripping time.

The date is indicated by a calendar dial marked for twelve months and for 365 days. The calendar is set by depressing the calendar-drive pinion and then rotating the calendar dial until the desired day appears under the index. There are 365 teeth in the calendar drive gear (one for each day); so it is impossible to make an error of a fraction of a day.

The riders are reversible or can be interchanged between the a.m. and p.m. tripping arms. This provides a simple means of obtaining a reversed sequence of operations. A support for a "mid-night" rider can be furnished at the option of the purchaser. This support permits the setting of a rider at any time between 10 p.m. and 2 a.m. This rider, however, is fixed as regards the tripping time and operates the switch at the same time every day.

HOUSING

The switch housing consists of a die-cast aluminum case and cover. The cover can be furnished with hinges at the left side or the bottom at the option of the purchaser. The cover is fastened by a latch which draws it tight on a thick gasket. This latch is on the right side for a cover hinged at the left, and at the top for a cover hinged at the bottom. The dimensions of this cover and the arrangement of the latch permit the cover to be opened while the switch is installed in a lamppost. Provisions are also made for sealing the latch.

A screw is provided on the left side of the case for anchoring the mounting strap. The other end of the

mounting strap is equipped with a bolt and nut and is attached to the case by a lug when the case is installed in a post. This strap is designed to fit any pipe between $2\frac{7}{8}$ and $6\frac{5}{8}$ inches in diameter.

The top and bottom of the case are extended beyond the side walls, and the cover is formed to fit this extension. This projection is intended to prevent dirt from falling into the mechanism when the cover is opened.

The serial number of each switch is stamped on the case and also on the nameplate attached to the cover. This nameplate also shows the rating and model number of the switch. A cover with hinges on the left side can be arranged so that it is removable or not removable at the option of the customer. Covers with hinges at the bottom are not removable.

A hinged insulating cover over the terminals is also optional.

ACCURACY

The dials can readily be set to within the following limits:

1. Minute dial: plus or minus one-half minute.
2. Calendar dial: This setting can be made exact.

The switch will operate within plus or minus four minutes of the schedule for which it is set. It is customary in street-lighting installations to set the switch to close the contacts within eight minutes before scheduled lighting time and to open the contacts within eight minutes after scheduled extinguishing time.

With proper care and handling, this device will perform its intended functions accurately and reliably for a number of years with only an occasional replenishment of the motor lubrication. The other parts of the switch will require no attention.

120 Volts, 60 Cycles

Contacts Spst—15 Amperes A-c

Cover Hinged	Side Lugs	Mounting Straps	Cat. No.	Price
Bottom	Yes	Yes	3T18BA2	On Application
Bottom	No	No	3T18CA2	
Left Side	Yes	Yes	3T18DA2	
Left Side	No	No	3T18EA2	

Dimensions: $9\frac{3}{16}$ in. by $4\frac{3}{16}$ in. by $12\frac{5}{32}$ in. over-all.

CARRIER-CURRENT CONTROL

A form of pilot control, gaining in favor for street lighting, is the carrier-current system shown schematically in Fig. 1. The existing distribution feeders and secondaries are used to provide the equivalent of pilot-wire control, without the necessity of using separate pilot conductors. Some of the advantages of this system are:

1. **Provides remote control without pilot wires.** The existing distribution feeders carry the control energy.
2. **Same equipment used for both series and multiple lighting control.** Also readily adapted to part-night as well as all-night lighting operation.
3. **Applicable to control of other loads also,** in addition to street lighting, such as domestic off-peak water heaters, outdoor sign lighting, and show-window lighting.
4. **Standard equipment can be used on practically any distribution system.** Special construction not required.
5. **Extremely flexible** as to number and location of controllers, growth of substation, and changes in lighting system.

6. **Low maintenance.** A result of few moving parts and very light duty cycle.
7. **Negligible energy consumption.** Operates only a few minutes during each 24 hours.
8. **Excellent reliability assured.** Control channel is as reliable as the circuit feeding the controlled loads. Damage to one controller or to the series or multiple lamps connected to one controller, cannot affect other controllers. Power outages cannot turn controllers on or off. Operation unaffected by temperature, humidity, or street-traffic vibrations. Users' records indicate better than 99.99 per cent reliability.

PRINCIPAL OF OPERATION

As indicated in Fig. 1, this system of control utilizes the existing power distribution lines and transformers, over which the control energy is transmitted from the substation to operate relays directly connected to the 115-volt secondary circuits. At the substation, a small motor-alternator generates sufficient carrier current to energize one feeder at a time. By means of a push-button panel

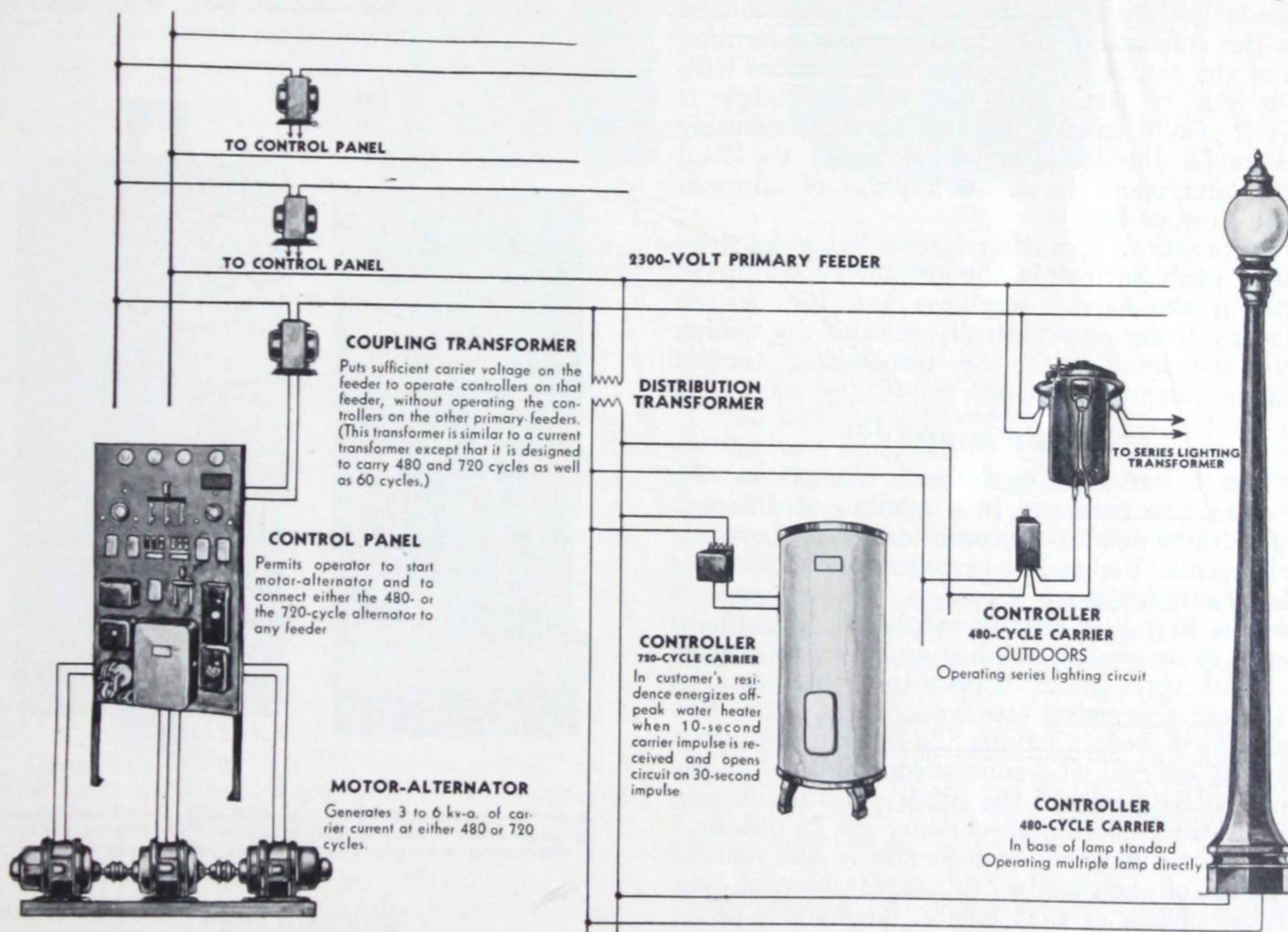


Fig. 1

Pictorial single-phase diagram for G-E carrier-current control of series and multiple street lighting, and domestic off-peak water heaters

CARRIER-CURRENT CONTROL

equipped with a standard plug-and-jack arrangement, the operator conveniently connects the output of the high-frequency alternator to the series coupling transformers in any desired feeder, to control both the series and multiple street lights connected to that feeder.

By employing a two-frequency transmitter as illustrated, the same substation equipment can be used to control water heaters as well as street lights.

The 480-cycle energy used for street-lighting control, and the 720-cycle used for off-peak water heating, readily pass through the series coupling transformers, but blocking capacitors on the low side prevent flow of power back in the opposite direction. These series transformers also provide selective feeder control and greatly reduce the required transmitter output, by feeding the control energy into the feeder in series with the station bus.

This superimposed control energy travels through the feeder regulators and out along the feeder, and is stepped down to the 115-volt secondary circuits through the distribution transformers in essentially the same manner as the 60-cycle power voltage. At any desired point on the secondary circuits, the tuned relay in the carrier controller responds directly to the control energy transmitted from the substation. The load contactor forming part of the controller operates in accordance with the length of time that the carrier energy is received. On a carrier impulse of approximately 10 seconds, the load contactor closes the load circuit, and opens it on an impulse of approximately 30 seconds.

In practice, operation is effected simply by pressing push buttons in the attended station, the length of the carrier impulses and the desired frequency being automatically selected by timing relays associated with the transmitter control panel.

STATION EQUIPMENT

The transmitter equipment located in the station can be arranged in a number of different ways, best to meet local conditions and operating requirements. For radial systems involving delta feeders, and for most Y feeders, the arrangement shown in Fig. 1 is usually employed, principally because of its great flexibility and the low cost of the small three-phase transmitter that can be used when energizing one feeder at a time. For Y-connected feeders having the neutral conductor grounded only at the substation, and not interconnected with any of the other neutrals outside of the station, additional economy can be obtained by using one coupling transformer in the neutral conductor of each feeder, to provide control over all three phases of that feeder. This single-phase arrangement is very economical because it requires only one-third as many coupling transformers.

For very small or very large substations, and for systems having interconnected network areas,

it is sometimes more economical to couple the motor-alternator to the station bus by means of shunt coupling capacitors, thereby energizing all feeders simultaneously instead of one at a time. This arrangement, however, is less usual than those mentioned above; its greatest use is found where it is also necessary to transmit the control energy over higher-voltage distribution lines to provide control with one central transmitter of all street lights and water heaters in two or more substation areas.

The size of the transmitter under the latter arrangement depends primarily on the total kva capacity of the distribution system and the area over which the control energy is transmitted, rather than on the number of control points involved; so the most satisfactory and most economical arrangement in these special cases can be determined only by considering the individual conditions and operating requirements involved.

For the control of street lights in unattended substations, the small station transmitters can be arranged to operate automatically, or a number of such transmitters can be controlled directly by providing the central operator with a small 1080-cycle remote-control transmitter that operates over the higher-voltage power lines.

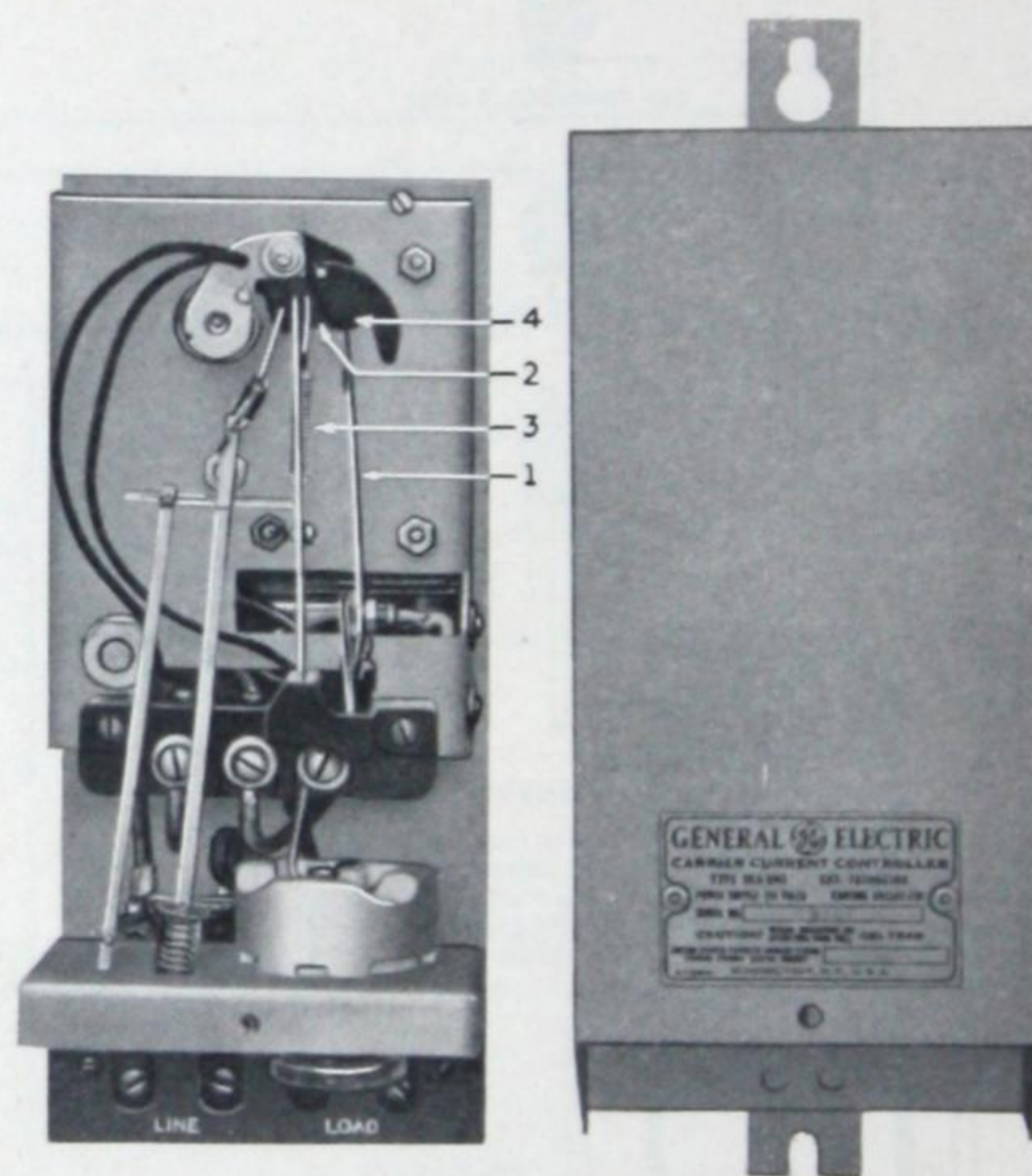


Fig. 2
G-E carrier-current controller, Type SCS-5H5, for all-night street-lighting control in base of lamp standard. Approximate over-all dimensions, 4 by 4 by 11 inches. Approximate net weight, 7½ lb

CONTROLLERS

Two designs of controller mechanisms are available: one for all-night street lighting and off-peak water heating, and the other for part-night

CARRIER-CURRENT CONTROL

street lighting. The first type can be furnished for outdoor service either in the case shown in Fig. 2, or the one shown in Fig. 3.

The load contactor in all of these types is rated 10 amperes incandescent-lamp load at 115 volts, or 15 amperes resistance load at 115 or 230 volts. They are capable, therefore, of controlling one or two multiple lamps directly, or a number of series circuits through the use of standard Novalux controllers.

block (2), thus permitting the spring (3) to pull the mercury load switch (7) to the ON position.

In the morning, when a 30-second carrier impulse is transmitted to turn the lights off, the bimetal strip (1) deflects further to the right under pawl (4), until it engages the notch on the pawl. At the end of the impulse, the bimetal strip (1) cools and deflects toward the left, and pushes the load switch to the OFF position shown, where the operating strip (1) disengages from the pawl and

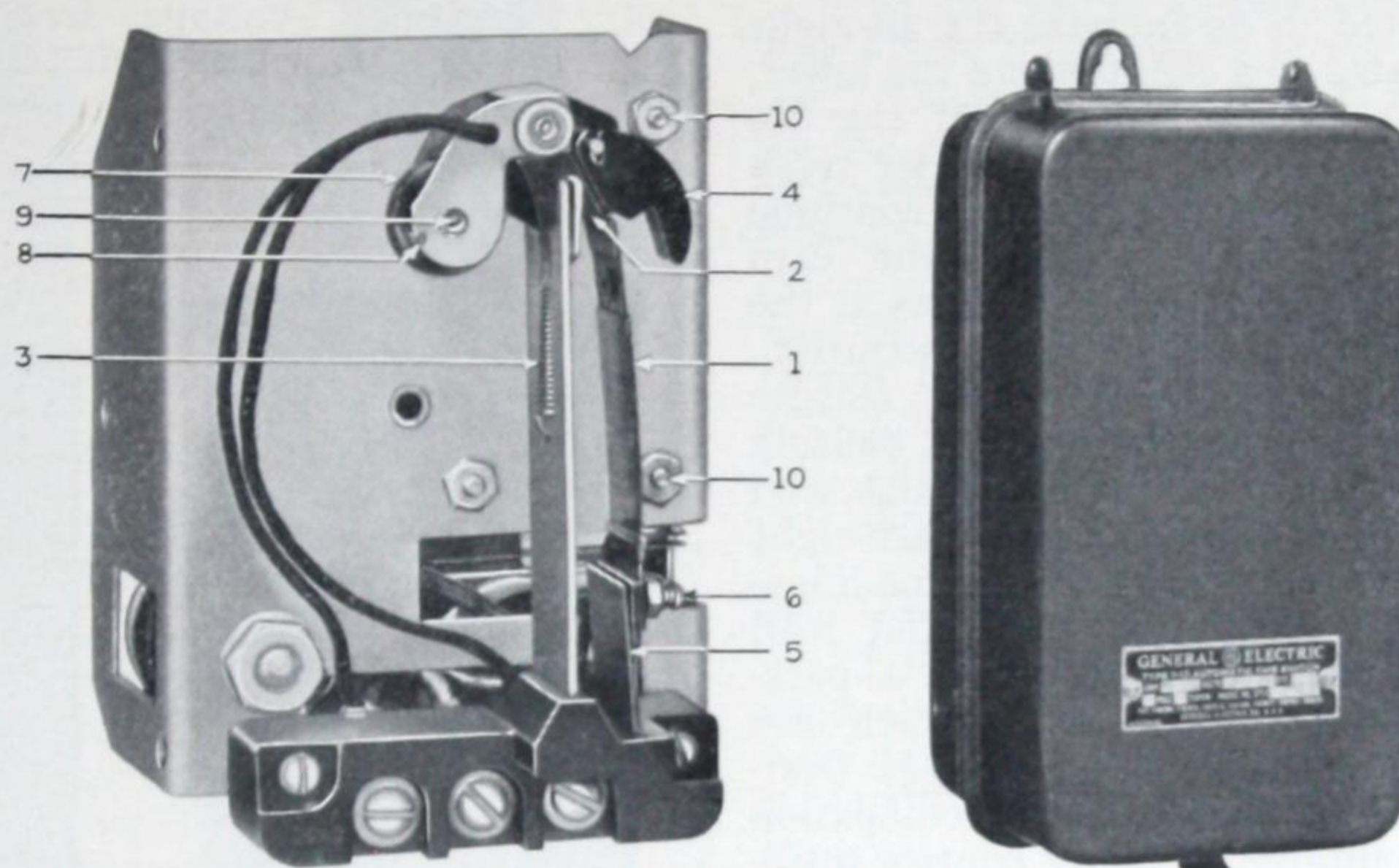


Fig. 3
G-E carrier-current controller, Type SCS-5H6, for all-night street-lighting control outdoors. Approximate dimensions, 5 by 6 by 11 inches. Approximate net weight, 7 lb

ALL-NIGHT STREET-LIGHTING AND WATER-HEATING CONTROLLER

Fig. 2 shows the type most suitable for all-night street-lighting purposes, when mounted in the base of a lamp standard. This case is constructed on the diving-bell principle, permitting temporary submersion without affecting operation. This type is provided with exposed load fuse, mechanical hand trip of the load contactor, and terminal board for line and load connections. The case shown in Fig. 3 houses the same controller mechanism without the exposed terminal board, hand trip, and load fuse.

Operation of the controller shown in Fig. 2 and 3 is as follows: When carrier current of the proper frequency is impressed across the input circuit—which consists of a capacitor and a reactor connected in series across the 115-volt line—the carrier relay is energized by rectified carrier current obtained through a small copper-oxide rectifier connected across a portion of the reactor winding. The carrier relay impresses 115 volts across the heater wire wound upon the bimetal strip (1). Under the action of this heater, the bimetal strip deflects to the right beyond the shelf of the switch

comes to rest under the switch-block assembly. In this way, regardless of the position of the load contactor, a short carrier impulse of approximately 10 seconds will always leave the load contacts in the closed position, and an impulse of approximately 30 seconds assures that the load contacts open and remain open.

A second, compensating bimetal strip (5) supports the operating strip in such a way that operation of the device is independent of ambient temperature changes.

The same mechanism, but mounted in an indoor case and for operation at 720 instead of 480 cycles, is used to control other distribution loads such as off-peak water heaters and certain industrial or commercial loads.

PART-NIGHT STREET-LIGHTING CONTROLLER

The part-night street-lighting controller, shown in Fig. 4, has an input circuit similar to that described above, but in this type the load contactor is operated by a synchronous motor and cam arrangement that rotates at 1 rpm whenever the contacts of the carrier relay close.

CARRIER-CURRENT CONTROL

When a 480-cycle impulse of 10 seconds duration is received, the cam rotates sufficiently to permit the upper load contacts to snap to the closed position. At the end of the 10-second impulse, the synchronous motor is de-energized by the opening of the carrier relay, the lamp circuit remains closed, and the mechanism is ready for the midnight OFF impulse.

At midnight, when another 10-second carrier impulse is transmitted, the cam advances sufficiently to de-energize the part-night lamps. This impulse does not affect the all-night controllers.

In the morning, when the 30-second carrier impulse is transmitted to de-energize the all-night lamps, the cam rotates to a point where the lower, motoring contacts close. At the end of the 30-second impulse, the contacts of the carrier relay open, but because the motoring contacts continue to energize the synchronous motor, the cam rotates until it opens the motoring contacts at the normal OFF position shown in the illustration.

This motoring, or "resynchronizing," feature prevents small variations in timing from causing cumulative errors in the position of the cams, and also assures that the all-night and part-night controllers will always be synchronized. A modification of this design, using two cams and load contactors, can be used to control both a part-night lamp and an all-night lamp which are mounted on a single lighting standard. The flexibility of this cam arrangement makes modification of this design also suitable to many control problems other than street-lighting and water-heating control.

APPLICATION

Where the standardized equipment is applicable, the selection of the proper rating and arrangement is relatively simple, and the system can be readily installed and placed in operation by the purchaser's own distribution engineers. It is recommended, however, that the General Office be given an opportunity to check the proposed installation. This can be done most conveniently by requesting a copy of the specially prepared Proposition Questionnaire.

If a check of approximate prices and prelimi-

nary layout only is desired, the following information should be forwarded to the nearest Sales Office.

1. Kind of load to be controlled.
2. Current and voltage rating of distribution feeders. Number of phases and number of conductors. Is neutral grounded only at the distribution substation, and not interconnected with other neutrals outside the station?
3. Total number of distribution feeders, and the number of feeders over which control is initially required.
4. Frequency, voltage, kva rating, and per cent reactance of each transformer bank or generator directly connected to the feeder bus.

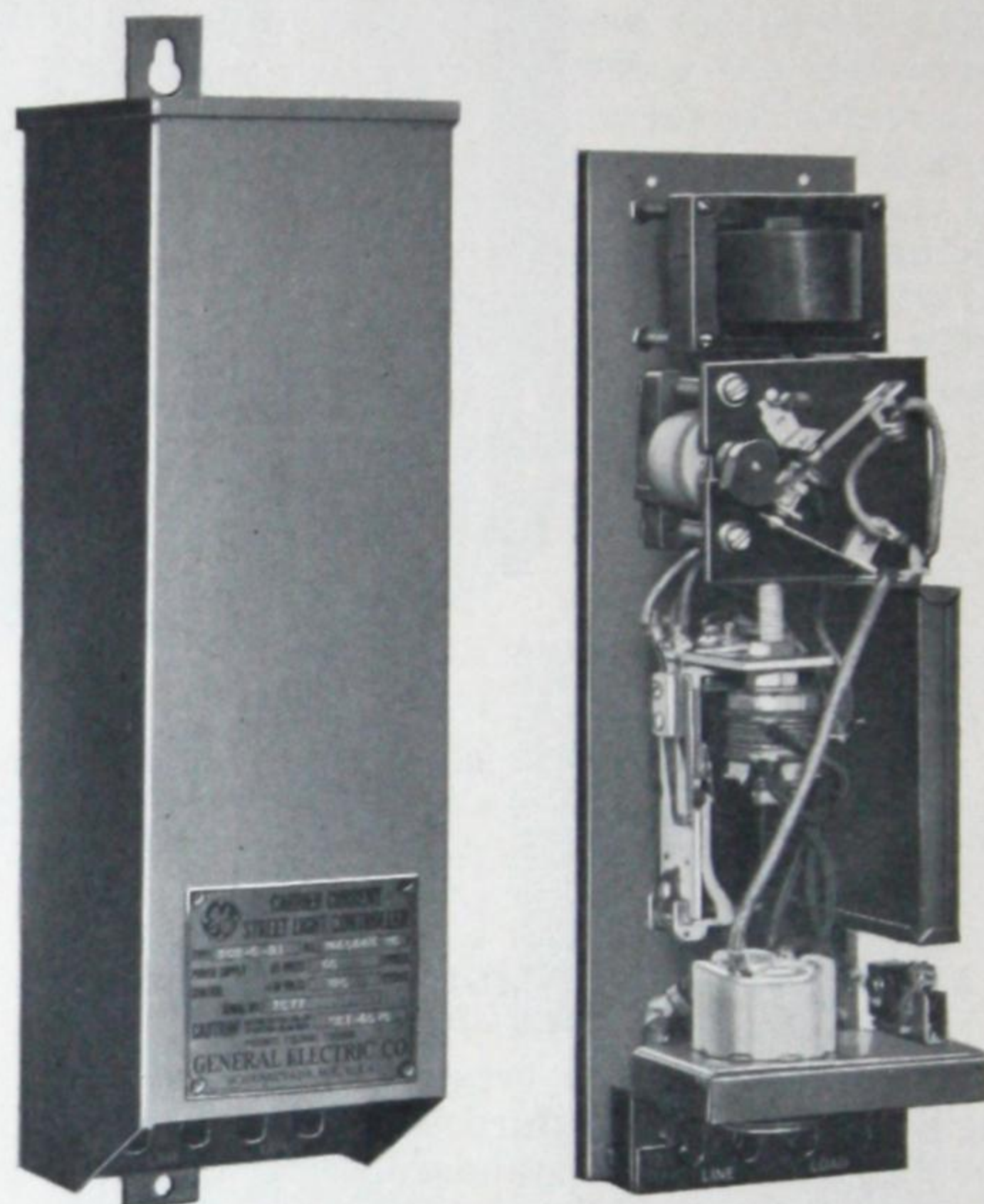


Fig. 4
G-E carrier-current controller, Type SCS-5B1, for part-night street-lighting control in base of lamp standard. Approximate over-all dimensions, 4 by 4 by 15 inches. Approximate net weight, 10 lb

TYPE IL NOVALUX SERIES TRANSFORMERS

The Type IL transformer is an insulating transformer that is used to operate (one or two) series incandescent lamps. The primary is connected in series with a series circuit, and the secondary furnishes constant current at a very low potential.



Fig. 1
(Photograph 161724)
Vault or manhole type



Fig. 2
(Photograph 161722)
Pole-base type

Incandescent lamps in large sizes operate more efficiently at high current than at the 6.6 amperes of standard series lighting circuits. Furthermore, a single large incandescent lamp is much more efficient than a number of small ones. In order to obtain the advantages of the high efficiency of large lamps operating at high current, without changing from the standard 6.6-ampere circuits, a transformer must be used to step up the current. Many ornamental lighting units are equipped with autotransformers which accomplish this purpose, but they do not insulate the lamp and wiring in the standard from the high voltage of the main circuits.

The Type IL transformer not only steps up the current from 6.6 to 15 or 20 amperes at each lamp but it also keeps the voltage at the lamp low. Low voltage at the lamp saves the expense of high-voltage conductors, heavy insulation, and high-voltage cutouts, which materially assists in liquidating the increased expense of an individual lamp series transformer installation; it eliminates "75 per cent of all line troubles" which occur between the pole and the lamp; it greatly increases the safety of an ornamental installation, because the poles and lamps are insulated from the high-voltage series circuits; and it permits the use of high-efficiency lamps in business districts where ordinances are in effect prohibiting high-potential wires above the street surface.

The standard Type IL transformer is designed for 6.6 amperes at 60 cycles on the primary. The secondaries are designed with two ratings, which permit the operation of either of two sizes of lamps. The secondary leads are tagged to indicate the connections for each lamp.

Two-light transformers can also be furnished with double-rating secondaries for the operation of two lamps in series or multiple. Such transformers are used in twin-light standards.

CHARACTERISTICS

All transformers are insulated for 10,500-volt circuits and take an insulation test of 22,000 volts for one minute between primary and all parts. An insulation test of 1500 volts is given between secondary windings and all parts. These tests agree with established manufacturing standards.

No film cutout is required on the secondary for single-lamp transformers except for the 25,000-lumen size; however, where greater efficiency is desired, the use of film cutouts is more desirable. The use of series-type luminaires and film cutouts is recommended with all ratings of Type IL transformers, except with the 800/1000-lumen. Cutouts must be used in fixtures operating on the secondary of transformers operating two lamps in series, so that the secondary will be short-circuited in case both lamps fail, and interruption of service will be avoided in case one lamp fails.

REGULATION

When the lamp wattage varies between 8 per cent above and 20 per cent below normal, the secondary current will not vary more than 1 per cent with normal primary current and frequency supplied.

DESCRIPTION

The Type IL series transformers are classed in three groups: first, for operating one series lamp; second, for operating two series lamps in series; and third, for operating two series lamps independently or in multiple. Under each group there are four different types—vault, or manhole; pole-base with detachable couplings; pole-base with wiping sleeve; and aerial. Electrically the transformers under each type are identical, the basic difference being the mechanical arrangement of bringing out the leads.



Fig. 3
(Photograph 161102)
Connector

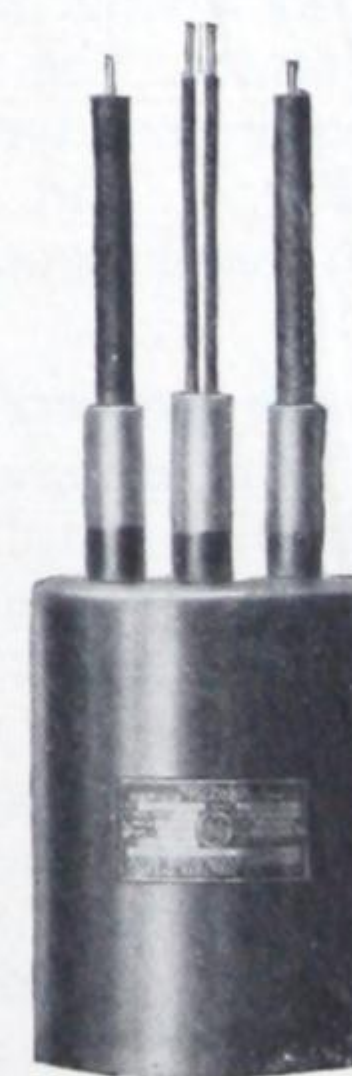


Fig. 4
(Photograph 161723)
Pole-base type with wiping sleeve

TYPE IL NOVALUX SERIES TRANSFORMERS

The primary or high-voltage side is thoroughly insulated from the secondary.

The windings are given a compound impregnation treatment under vacuum before they are insulated or assembled in the core iron. The assembled unit is placed in a rust-resisting, drawn-steel container which is then almost completely filled with a high-insulating, nonhygroscopic compound. This compound also has a high flow point and shows no signs of cracking at minus 40 F or C. All seams are then welded.

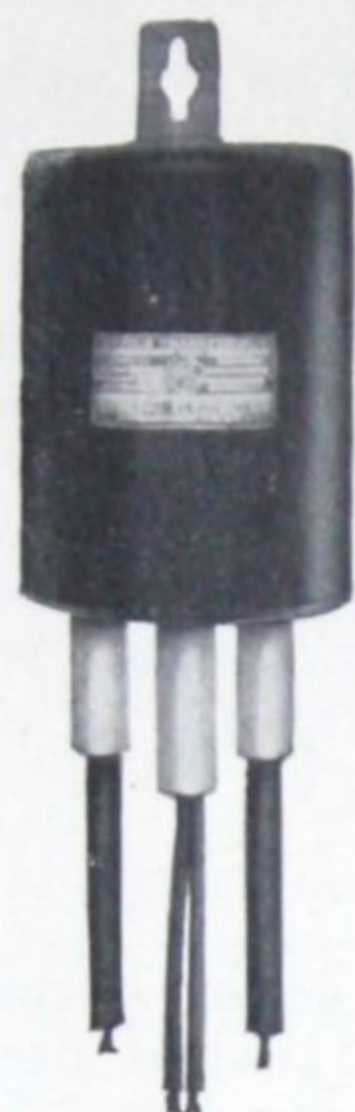


Fig. 5
(Photograph 269066)
Special pole-base type
with hanger lug



Fig. 6
(Photograph 280221)
Aerial type

VAULT OR MANHOLE TYPE

Transformers of this type are equipped with detachable couplings on both primary and secondary. This makes this type of transformer particularly adaptable to subway use where the transformers are subjected to complete submersion. In case of failure, the transformer can be very easily replaced with a new unit. It also facilitates testing the circuits. The vault-type transformer couplings are equipped with long brass wiping sleeves; (see Fig. 1 and 10), and wiped joints on both primary and secondary should be made as shown in Fig. 10.

POLE-BASE TYPE WITH DETACHABLE COUPLINGS

Transformers of this type are equipped with detachable couplings on the primary only as standard equipment. This type of connection is convenient for making circuit test in case of trouble, as the circuit is readily accessible at the primary terminals. Unlike the wiping-sleeve type of transformer, it can be quickly detached and inspected without the expense of breaking and remaking a wiped or soldered joint. The soldered joint on the primary can be made easily by any

practical mechanic or lineman (see Fig. 9). Taped joints from the underground cable to the primary wiping sleeve are not recommended on this type of transformer.

The secondary leads are brought out through a vertical sleeve, which must be taped and made waterproof to prevent damage from moisture.

POLE-BASE TYPE WITH WIPING SLEEVES

In cases where the expense of installing detachable coupling-type transformers is not warranted, the pole-base type with wiping sleeve can be installed in the base of ornamental poles. If wiped joints are not used, then a taped joint should be used and great care should be taken in thoroughly taping over the cable and wiping sleeves on the transformer. Good live rubber should be applied, followed by at least two layers of so-called "bicycle" tape applied half lap. The completed joint should then be painted with a weatherproof paint or varnish. This applies to both the primary and secondary connections.

This transformer is built for burying in the ground or for subway service. Both primary and secondary connections should be wiped joints when installed where it is subjected to submersion.

AERIAL TYPE

The aerial type is designed for mounting on the crossarm of a pole or for attachment to it and is used in conjunction with pendent- or bracket-type Novalux fixtures. This transformer is equipped with porcelain bushings through which the leads are brought out.



Fig. 7
(Photograph 161987)
Large aerial type
for operating
two lamps

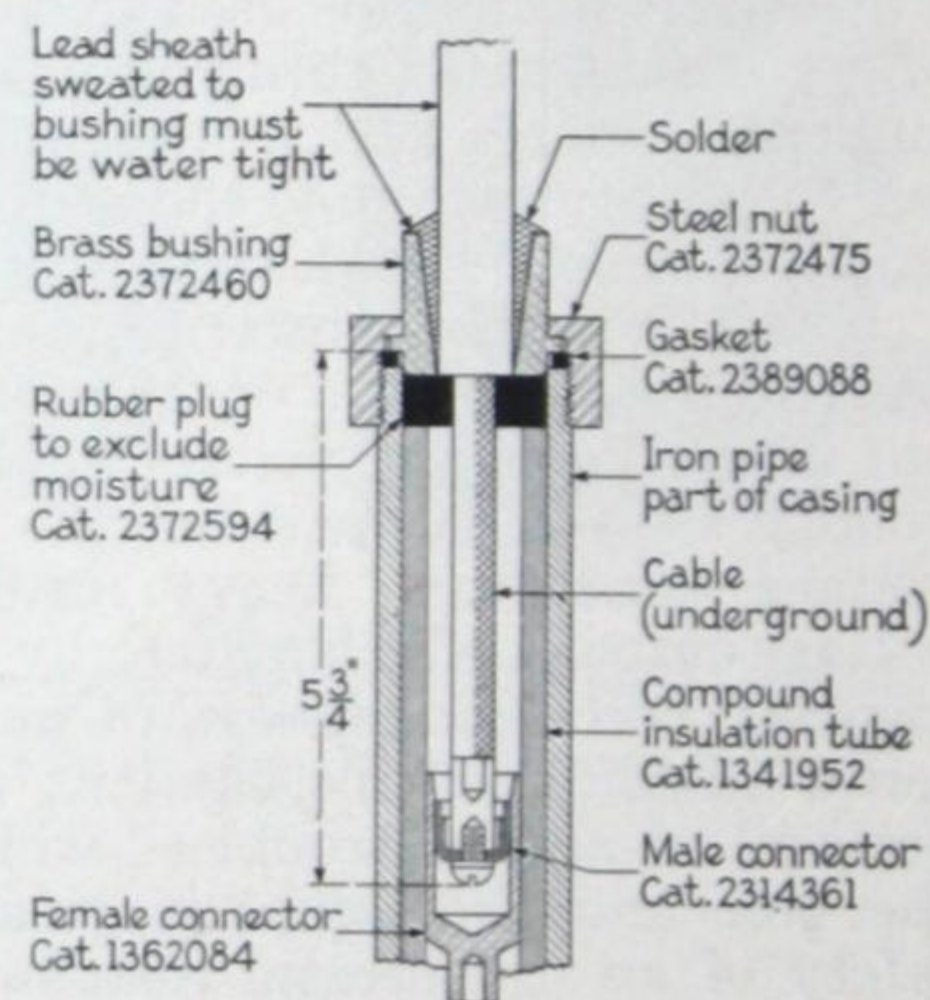


Fig. 8
(K-1050054)
Sectional view of detachable
coupling for pole-base
type primary lead

CONNECTORS TO REPLACE TRANSFORMERS

When a transformer with primary detachable couplings is cut out of the circuit, a U-shaped con-

TYPE IL NOVALUX SERIES TRANSFORMERS

nector as shown in Fig. 3 can be substituted by an operator or lineman in a few minutes. This device will be found to be a very practical substitute if a series transformer fails and no replacing transformer is available, and where it is essential that service be maintained.

ADVANTAGES

1. Provides SAFETY by insulating the pole and fixture from the high-voltage series circuit.
2. Permits the use of high-current, high-efficiency, concentrated-filament series lamps, which

are desirable because of the quality of light and for use with redirecting glassware.

3. Protects lamps from surges in the line.
4. Permits the use of the low-voltage cable in poles and eliminates the necessity for high-voltage cutouts, both of which features materially offset the additional cost of the transformer.
5. Eliminates 75 per cent of all line troubles which occur between the base of pole and the fixture.
6. Provides insulation for pendent and bracket fixtures mounted on metal poles.

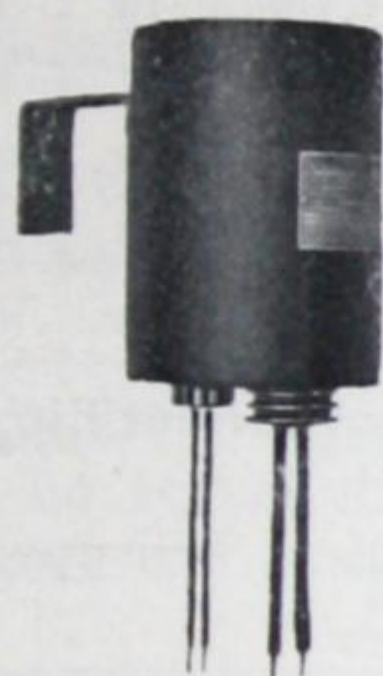


Fig. 9
(Photograph 162095)
Special aerial type with
crossarm hanger hook

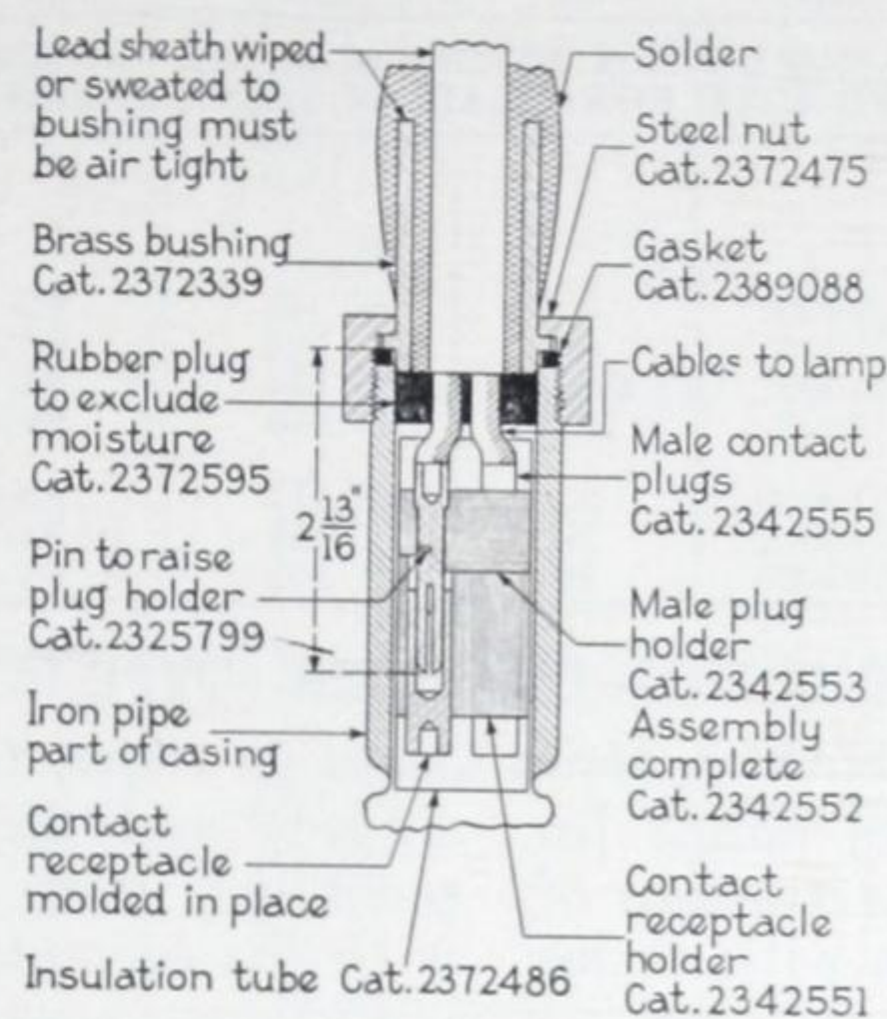


Fig. 10
(K-1050055)
Sectional view of detachable coupling
for vault-type secondary lead

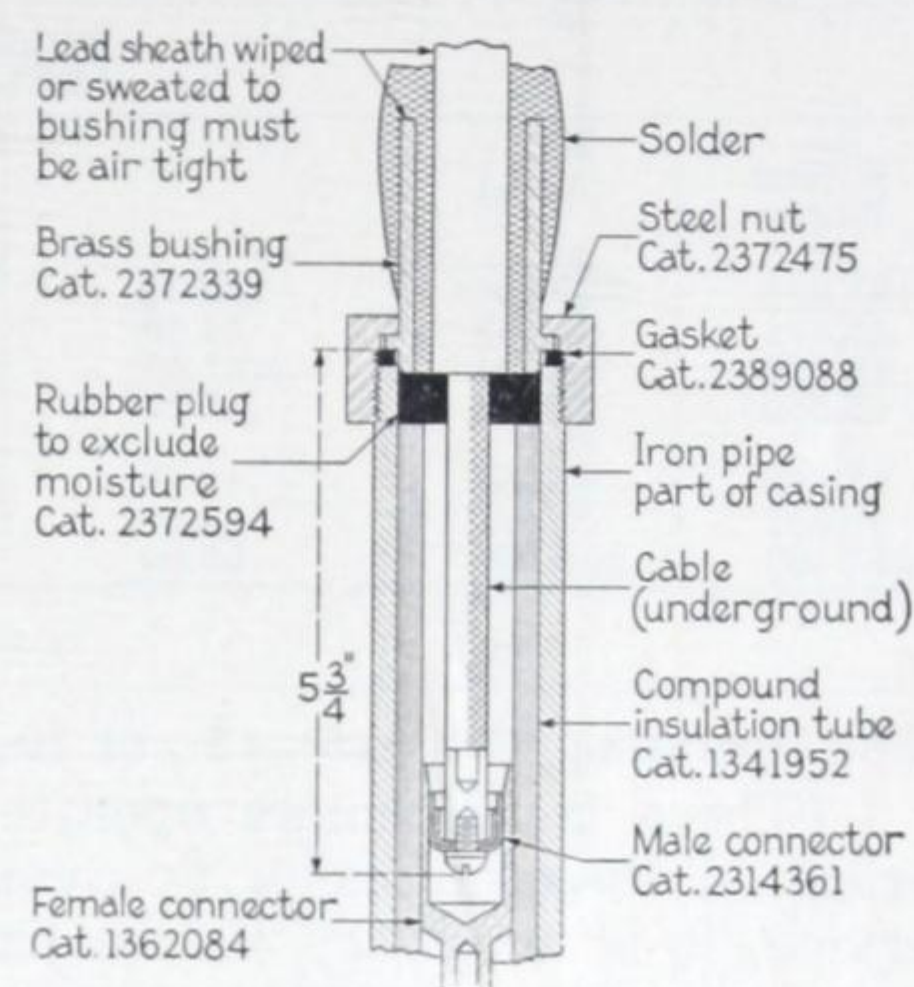


Fig. 11
(K-1050053)
Sectional view of detachable
coupling for vault-type primary
lead

TYPE IL NOVALUX SERIES TRANSFORMERS

For Use on 60-cycle, 6.6-amp Constant-current Circuits

SINGLE LIGHT—TYPE IL

For Operating (one) 6.6-, 15-, or 20-amp Series Lamps from 6.6-amp Constant-current Circuit

CAT. NO.	*LIST PRICE Class GO-51	LAMP RATING		‡Secondary Open Circuit Effective Voltage	△ Approx Efficiency in Per Cent	△ Approx Power-factor in Per Cent	APPROX WT IN LB			
		† Lumens	Amp				Ship.	Net		
VAULT OR MANHOLE TYPE WITH PRIMARY AND SECONDARY DETACHABLE COUPLINGS—FORM B-55 POLE-BASE TYPE WITH PRIMARY COUPLING AND SECONDARY WIPING SLEEVE—FORM B-5										
Vault	Pole-base	Vault	Pole-base							
3200600	3200599	\$45.80	\$42.80	800/1000	6.6	46	90	98	20	17
4X583	4X577	48.00	44.50	1000/2500	6.6	102	92	98	23	20
4X582	4X576	56.00	52.50	2500/4000	6.6/15	164	93	98	34	32
4X581	4X575	57.00	53.50	4000/6000	15/20	110	94	98	34	32
4X580	4X574	58.00	54.50	6000/10000	20	117	95	98	35	33
4X579	4X573	78.00	74.50	10000/15000	20	184	96	98.5	62	51
\$4X578	\$4X572	93.00	89.50	15000/25000	20	208	96	98.5	66	55

POLE-BASE TYPE WITH WIPING SLEEVES—FORM B-15 AERIAL TYPE WITH PORCELAIN BUSHINGS—FORM A-2

Wiping Sleeve	Aerial							Wip- ing Sleeve	Aerial	Wip- ing Sleeve	Aerial
18X834	3200598	\$31.80	800/1000	6.6	46	90	98	16	16	13	13
4X571	4X565	34.00	1000/2500	6.6	102	92	98	19	19	16	16
4X570	4X564	41.50	2500/4000	6.6/15	164	93	98	27	27	25	25
4X569	4X563	42.00	4000/6000	15/20	110	94	98	29	29	27	27
4X568	4X562	43.00	6000/10000	20	117	95	98	30	30	28	28
4X567	4X561	64.00	10000/15000	20	184	96	98.5	56	55	45	44
\$4X566	\$4X560	80.00	15000/25000	20	208	96	98.5	60	59	49	48

TWO-LIGHT—IN SERIES—TYPE IL

For Operating (two) 6.6-, 15-, or 20-amp MAZDA Series Lamps (in series) from 6.6-amp Constant-current Circuit

(These transformers operate [two] lamps [in series] on the secondary. To avoid interruption of service, it is necessary to use fixtures with series sockets and film cutouts. If both lamps on the secondary burn out, the transformers will operate with the secondary short-circuited.)

CAT. NO.	*LIST PRICE Class GO-51	LAMP RATING		‡Secondary Open Circuit Effective Voltage	△ Approx Efficiency in Per Cent	△ Approx Power-factor in Per Cent	APPROX WT IN LB	
		† Lumens	Amp				Ship.	Net
‡POLE-BASE TYPE WITH PRIMARY COUPLINGS AND SECONDARY WIPING SLEEVES—FORM B-6								
286550	\$62.00	1000 + 1000/2500 + 2500	6.6	189	92	98	33	31
286549	76.20	2500 + 2500/4000 + 4000	6.6/15	312	93	98	54	43
286548	86.60	4000 + 4000/6000 + 6000	15/20	184	94	98	56	45
286547	97.00	6000 + 6000/10000 + 10000	20	195	95	98	64	53
286546	125.50	10000 + 10000/15000 + 15000	20	308	96	98.5	112	97
POLE-BASE TYPE WITH WIPING SLEEVES—FORM B-16								
286545	\$51.00	1000 + 1000/2500 + 2500	6.6	189	92	98	28	26
286544	65.20	2500 + 2500/4000 + 4000	6.6/15	312	93	98	48	37
286543	75.60	4000 + 4000/6000 + 6000	15/20	184	94	98	50	39
286542	86.00	6000 + 6000/10000 + 10000	20	195	95	98	57	47
286541	114.50	10000 + 10000/15000 + 15000	20	308	96	98.5	107	92
AERIAL TYPE WITH PORCELAIN BUSHINGS—FORM A-3								
286540	\$51.00	1000 + 1000/2500 + 2500	6.6	189	92	98	28	26
286539	65.20	2500 + 2500/4000 + 4000	6.6/15	312	93	98	47	36
286538	75.60	4000 + 4000/6000 + 6000	15/20	184	94	98	49	38
286537	86.00	6000 + 6000/10000 + 10000	20	195	95	98	57	46
286536	114.50	10000 + 10000/15000 + 15000	20	308	96	98.5	107	92

- *1. For 7.5-amp primary use 6.6-amp prices.
2. Crossarm hangers can be furnished instead of lugs on aerial-type transformers at an addition of \$3.50 to list price; see Fig. 9. Specify thickness of crossarm, standard sizes 3 1/4 in., 3 1/2 in., 3 3/4 in.
3. Grounding clamps for attaching to the sleeve of Type IL transformers can be supplied at \$0.60 net.
4. Special transformers can be furnished for any commercial current, frequency, or lumen lamps. Apply to the nearest Sales Office.
5. Primary U-shaped connector can be furnished for \$14.00 list (Fig. 2 and 3).
6. Hanger lugs similar to those shown in Fig. 5 and 7 can be furnished for the pole-base type with wiping sleeves. Apply to the nearest Sales Office.
7. For pothead-type transformers, complete with disconnecting cutouts, refer to pages 278 and 279, designs Form B-23 and B-24. Pothead cutouts are listed separately on pages 212 to 216.
- †8. Can be furnished in vault type; refer to the nearest Sales Office for quotation.
- †9. The 800/1000 and 1000/2500-lumen transformers are 1:1 ratio and secondary leads supply 6.6 amperes for both sizes of lamps.
- †10. The 2500/4000-lumen transformers have secondary leads supplying 6.6 amperes for the 2500-lumen lamps and 15 amperes for the 4000-lumen lamps.
- †11. The 4000/6000-lumen sizes also have leads which furnish 15 amperes for the 4000-lumen lamps and 20 amperes for the 6000-lumen lamps.
- †12. The 6000/10,000-lumen, the 10,000/15,000-lumen, and the 15,000/25,000-lumen sizes have one set of secondary leads only supplying 20 amperes since the current required on all the leads is the same.
- †13. Special 20-amp, 4000-lumen lamp will operate satisfactorily on 20-amp connection of any Type IL transformer from 6000- to 15,000-lumen inc., with current regulation $\pm 1\frac{1}{2}$ per cent.
- †14. The maximum voltage which can be shown by means of a voltmeter.
- †15. Series sockets with film cutouts must be used with these transformers.
- †16. For brass or copper wiping sleeves, add \$3.00 to list price of wiping-sleeve transformer.
- †17. Transformers can be supplied in cases to mount on top of trolley poles—apply to nearest Sales Office.
- †18. Efficiency and power-factor at 100 per cent load.

TYPE IL NOVALUX SERIES TRANSFORMERS

For 60-cycle, 6.6-amp Constant-current Circuits

TWO-LIGHT—IN MULTIPLE—TYPE IL

For Operating (two) 6.6-, 15-, or 20-amp MAZDA Series Lamps (in multiple) from 6.6-amp Constant-current Circuits

(These transformers operate [two] lamps [in multiple], independent of one another, on the secondary. IL type fixtures are used. If one lamp burns out, the other continues to receive rated current and delivers rated lumen output, as there is a separate winding for each lamp.)

CAT. NO.	*LIST PRICE Class GO-51	LAMP RATING		‡Secondary Open Circuit Effective Voltage	△ Approx Efficiency in Per Cent	△ Approx Power- factor in Per Cent	APPROX WT IN LB	
		† Lumens	Amp				Ship.	Net
POLE-BASE TYPE WITH PRIMARY COUPLINGS AND SECONDARY WIPING SLEEVES—FORM B-8								
286565	\$89.00	1000 /2500 1000 / 2500	6.6 /6.6 6.6 / 6.6	102	92	98	43	33
286564	95.00	2500 /4000 2500 / 4000	6.6 /15 6.6 / 15	164	93	98	82	68
286563	101.00	4000 /6000 4000 / 6000	15 /20 15 / 20	110	94	98	86	72
286562	111.00	6000 /10000 6000 / 10000	20 /20 20 / 20	117	95	98	86	72
286561	139.00	10000 /15000 10000 / 15000	20 /20 20 / 20	154	96	98.5	112	97
POLE-BASE TYPE WITH WIPING SLEEVES—FORM B-17								
286560	\$77.00	1000 /2500 1000 / 2500	6.6 /6.6 6.6 / 6.6	102	92	98	38	28
286559	85.00	2500 /4000 2500 / 4000	6.6 /15 6.6 / 15	164	93	98	77	63
286558	91.00	4000 /6000 4000 / 6000	15 /20 15 / 20	110	94	98	81	67
286557	101.00	6000 /10000 6000 / 10000	20 /20 20 / 20	117	95	98	81	67
286556	129.00	10000 /15000 10000 / 15000	20 /20 20 / 20	154	96	98.5	107	92
AERIAL TYPE WITH PORCELAIN BUSHINGS—FORM A-4								
286555	\$77.00	1000 /2500 1000 / 2500	6.6 /6.6 6.6 / 6.6	102	92	98	38	28
286554	85.00	2500 /4000 2500 / 4000	6.6 /15 6.6 / 15	164	93	98	77	63
286553	91.00	4000 /6000 4000 / 6000	15 /20 15 / 20	110	94	98	81	67
286552	101.00	6000 /10000 6000 / 10000	20 /20 20 / 20	117	95	98	81	67
286551	129.00	10000 /15000 10000 / 15000	20 /20 20 / 20	154	96	98.5	107	92

- * 1. For 7.5-amp primary use 6.6-amp prices.
 2. Crossarm hangers can be furnished instead of lugs on aerial-type transformers at an addition of \$3.50 to list price; see Fig. 9. Specify thickness of crossarms, standard sizes 3 1/4 in., 3 1/2 in., 3 3/4 in.
 3. Grounding clamps for attaching to the sleeve of Type IL transformers can be supplied at \$0.60 net.
 4. Special transformers can be furnished for any commercial current, frequency, or lumen lamps. Apply to the nearest Sales Office.
 5. Hanger lugs similar to those shown in Fig. 5 and 7 can be furnished for the pole-base type with wiping sleeves. For price apply to nearest Sales Office.
 6. For pothead-type transformers, complete with disconnecting cutouts, refer to pages 278 and 279, designs Form B-23 and B-24. Pothead cutouts are listed on pages 212 to 216.
 7. Can be furnished in vault type. Refer to the nearest Sales Office for quotation.
 † 8. The 1000/2500-lumen transformers are 1:1 ratio and secondary leads supply 6.6 amperes for both the 1000- and 2500-lumen lamps.
 9. The 2500/4000-lumen transformers have secondary leads supplying 6.6 amperes for the 2500-lumen lamps and 15 amperes for the 4000-lumen lamps.
 10. The 4000/6000-lumen sizes also have leads which furnish 15 amperes for the 4000-lumen lamps and 20 amperes for the 6000-lumen lamps.
 11. The 6000/10,000-lumen and the 10,000/15,000-lumen sizes have one set of secondary leads only, supplying 20 amperes, since the current required on all the leads is the same.
 † 12. The maximum voltage which can be obtained by means of a voltmeter.
 13. For brass or copper wiping sleeves, add \$3.00 to list price of wiping-sleeve transformers.
 △ 14. Efficiency and power-factor at 100 per cent load.

TYPE IL NOVALUX SERIES TRANSFORMERS

Dimensions

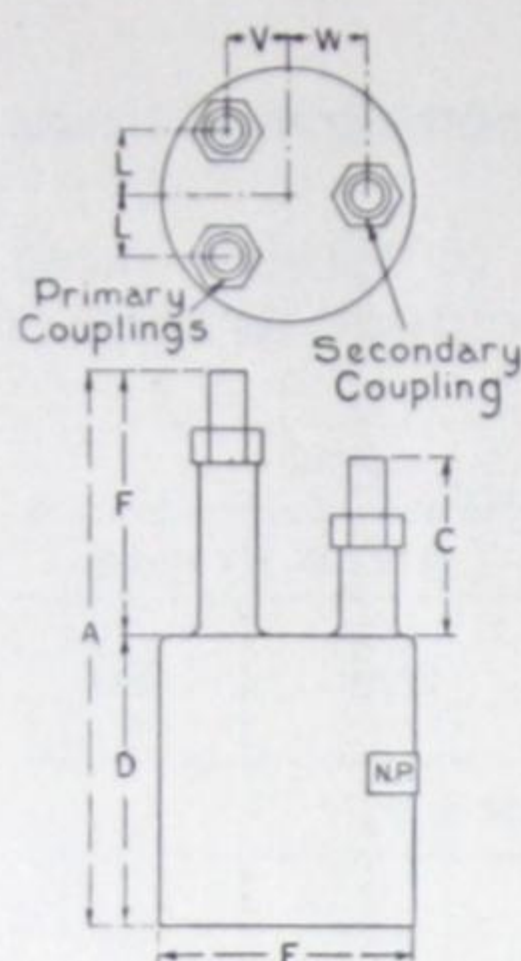


Fig. 12

Vault or manhole type

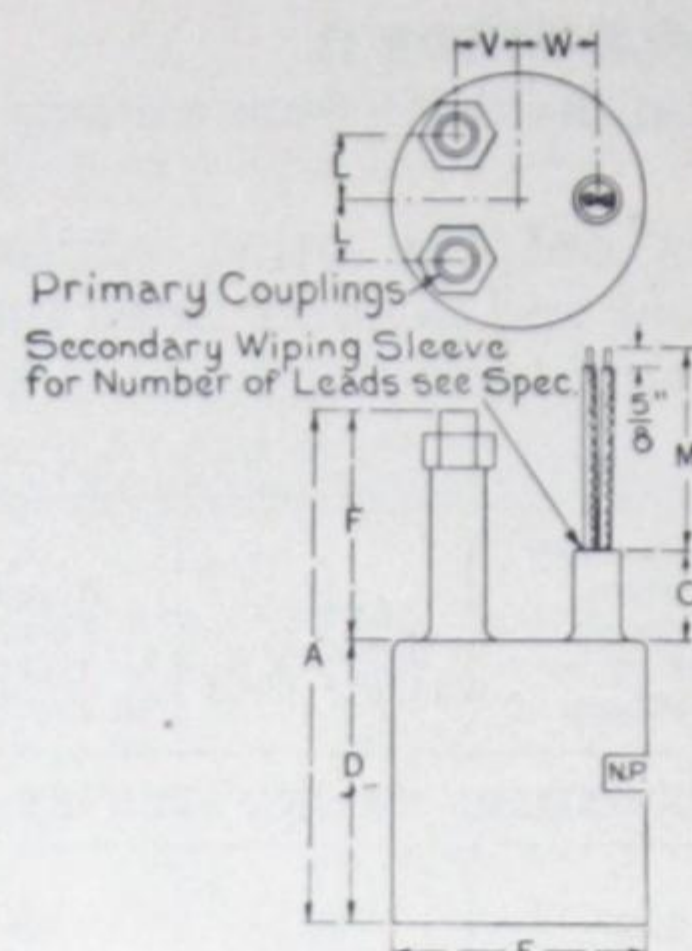


Fig. 13

Pole-base detachable-coupling type

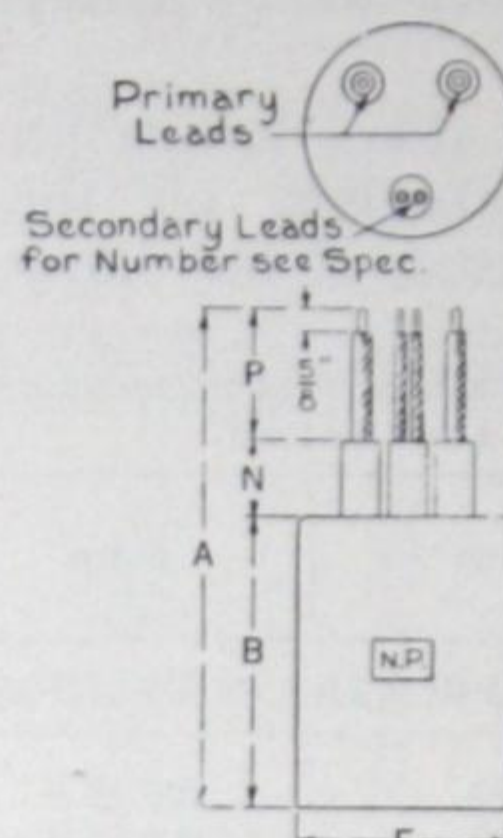


Fig. 14

Pole-base type with wiping sleeves

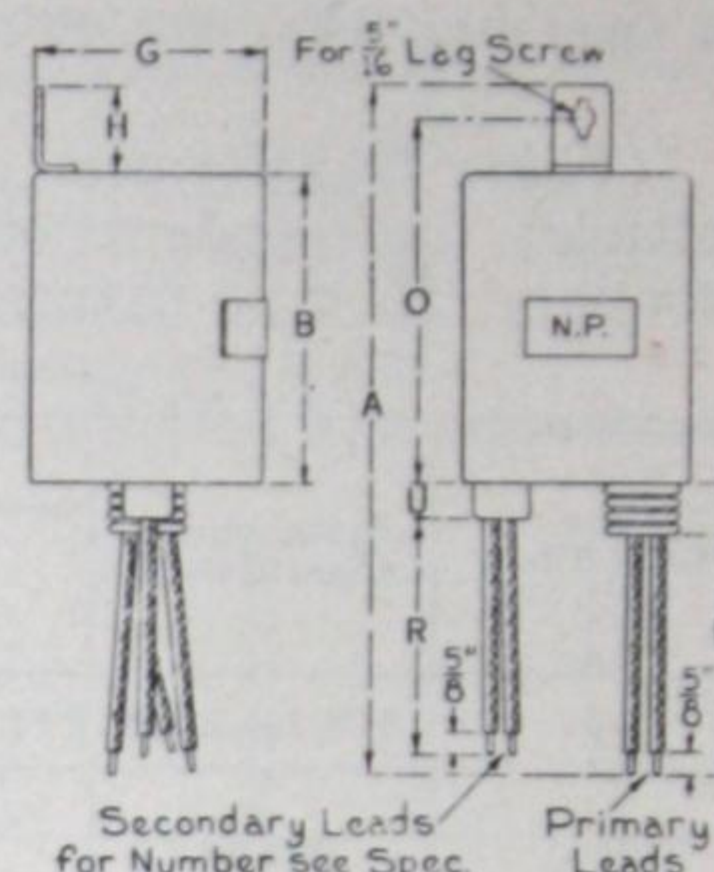


Fig. 15

Aerial type

FOR OPERATION OF ONE SERIES MAZDA LAMP—Form B-55

DIMENSIONS IN INCHES

Vault or Manhole Type (Fig. 12)

Lumens	A	C	D	E	F	L	V	W
800/1000	14 ¹⁵ / ₁₆	5 ⁹ / ₁₆	6 ⁹ / ₁₆	5 ¹¹ / ₃₂	8 ³ / ₈	1 ³ / ₈	3 ³ / ₄	1 ⁹ / ₁₆
1000/2500	14 ¹⁵ / ₁₆	5 ⁹ / ₁₆	6 ⁹ / ₁₆	5 ¹¹ / ₃₂	8 ³ / ₈	1 ³ / ₈	3 ³ / ₄	1 ⁹ / ₁₆
2500/4000	16 ³ / ₄	5 ⁹ / ₁₆	8 ³ / ₈	5 ¹¹ / ₃₂	8 ³ / ₈	1 ⁵ / ₁₆	1 ⁵ / ₁₆	1 ⁷ / ₈
4000/6000	16 ³ / ₄	5 ⁹ / ₁₆	8 ³ / ₈	5 ¹¹ / ₃₂	8 ³ / ₈	1 ⁵ / ₁₆	1 ⁵ / ₁₆	1 ⁷ / ₈
6000/10000	16 ³ / ₄	5 ⁹ / ₁₆	8 ³ / ₈	5 ¹¹ / ₃₂	8 ³ / ₈	1 ⁵ / ₁₆	1 ⁵ / ₁₆	1 ⁷ / ₈
10000/15000	16 ³ / ₄	5 ⁹ / ₁₆	8 ³ / ₈	7 ⁵ / ₈	8 ³ / ₈	1 ⁷ / ₈	1 ⁷ / ₈	2 ⁵ / ₈
15000/25000	17	5 ⁹ / ₁₆	8 ³ / ₈	7 ⁵ / ₈	8 ³ / ₈	1 ⁷ / ₈	1 ⁷ / ₈	2 ⁵ / ₈

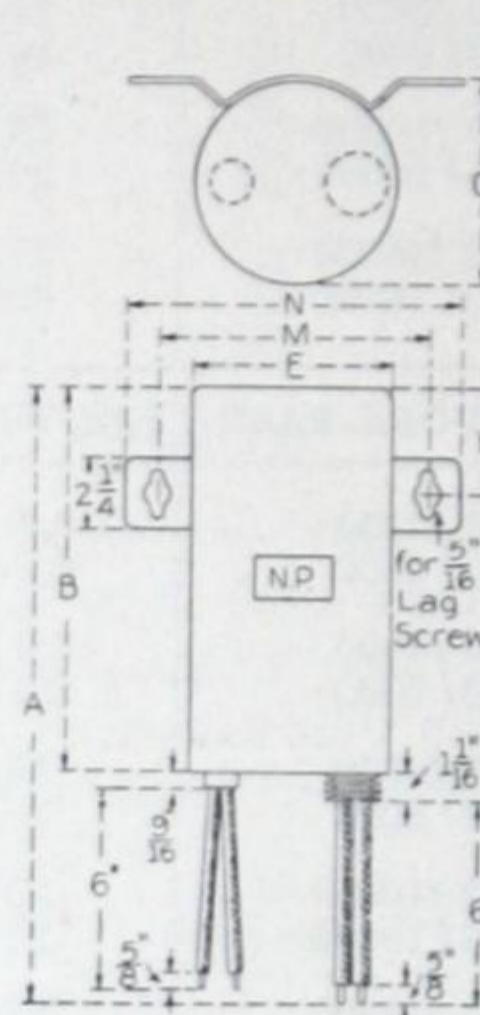


Fig. 16

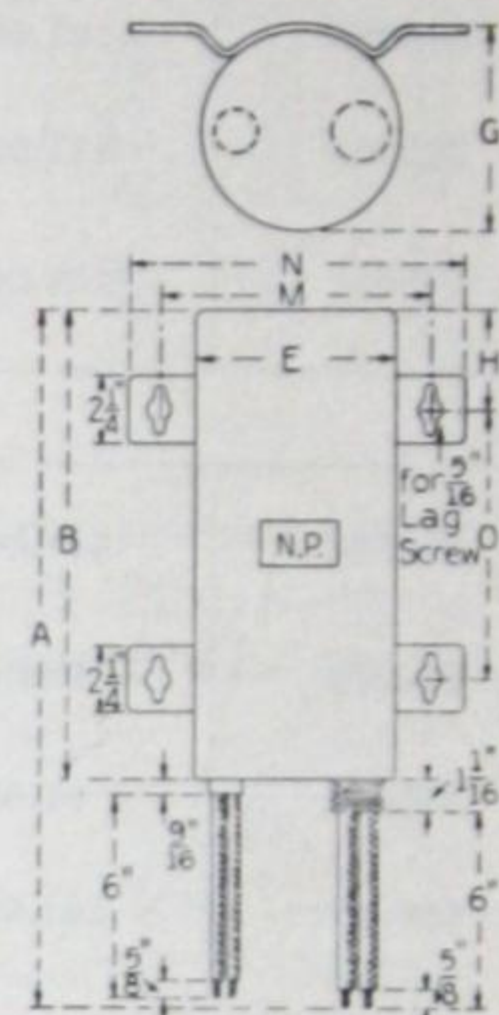


Fig. 17

DIMENSIONS IN INCHES

Lumens

Pole-base Detachable Coupling Type (Fig. 13)

Pole-base Wiping Sleeve Type (Fig. 14)

Aerial Type (Figs. 15, 16, or 17)

A	C	D	E	F	L	M	V	W	A	B	E	N	P	Fig. No.	A	B	E	G	H	M	N	O	R	T	U
---	---	---	---	---	---	---	---	---	---	---	---	---	---	----------	---	---	---	---	---	---	---	---	---	---	---

FOR OPERATION OF ONE SERIES MAZDA LAMP

Form B-5

Form B-15

Form A-2

800/1000
1000/2500
2500/4000
4000/6000

13 ¹¹ / ₁₆	2 ¹ / ₂	6 ¹ / ₈	5 ¹¹ / ₃₂	7 ³ / ₈	1 ³ / ₈	6	3 ³ / ₄	1 ⁹ / ₁₆	15 ¹ / ₈	6 ¹ / ₈	5 ¹¹ / ₃₂	2 ¹ / ₂	6	14	16	6 ¹ / ₈	5 ³ / ₈	2 ³ / ₈	7 ¹¹ / ₁₆	6	1 ¹ / ₈	1 ¹ / ₈	1 ¹ / ₈	1 ¹ / ₈
13 ¹¹ / ₁₆	2 ¹ / ₂	6 ¹ / ₈	5 ¹¹ / ₃₂	7 ³ / ₈	1 ³ / ₈	6	3 ³ / ₄	1 ⁹ / ₁₆	15 ¹ / ₈	6 ¹ / ₈	5 ¹¹ / ₃₂	2 ¹ / ₂	6	14	16	6 ¹ / ₈	5 ³ / ₈	2 ³ / ₈	7 ¹¹ / ₁₆	6	1 ¹ / ₈	1 ¹ / ₈	1 ¹ / ₈	1 ¹ / ₈
15 ³ / ₄	2 ¹ / ₂	8 ³ / ₈	5 ¹¹ / ₃₂	7 ³ / ₈	1 ³ / ₈	6	1 ¹ / ₈	1 ⁷ / ₈	16 ¹ / ₈	8 ³ / ₈	5 ¹¹ / ₃₂	2 ¹ / ₂	6	14	17 ¹¹ / ₁₆	8 ³ / ₈	6	2 ³ / ₈	9 ⁵ / ₈	6	1 ¹ / ₈	1 ¹ / ₈	1 ¹ / ₈	1 ¹ / ₈
15 ³ / ₄	2 ¹ / ₂	8 ³ / ₈	5 ¹¹ / ₃₂	7 ³ / ₈	1 ³ / ₈	6	1 ¹ / ₈	1 ⁷ / ₈	16 ¹ / ₈	8 ³ / ₈	5 ¹¹ / ₃₂	2 ¹ / ₂	6	14	17 ¹¹ / ₁₆	8 ³ / ₈	6	2 ³ / ₈	9 ⁵ / ₈	6	1 ¹ / ₈	1 ¹ / ₈	1 ¹ / ₈	1 ¹ / ₈

6000/10000
10000/15000
15000/25000

15 ³ / ₄	2 ¹ / ₂	8 ³ / ₈	5 ¹¹ / ₃₂	7 ³ / ₈	1 ³ / ₈	6	1 ¹ / ₈	1 ⁷ / ₈	16 ¹ / ₈	8 ³ / ₈	5 ¹¹ / ₃₂	2 ¹ / ₂	6	14	17 ¹¹ / ₁₆	8 ³ / ₈	6	2 ³ / ₈	9 ⁵ / ₈	6	1 ¹ / ₈	1 ¹ / ₈	1 ¹ / ₈	1 ¹ / ₈
15 ³ / ₄	2 ¹ / ₂	8 ³ / ₈	5 ¹¹ / ₃₂	7 ³ / ₈	1 ³ / ₈	6	1 ¹ / ₈	1 ⁷ / ₈	16 ¹ / ₈	8 ³ / ₈	5 ¹¹ / ₃₂	2 ¹ / ₂	6	14	17 ¹¹ / ₁₆	8 ³ / ₈	6	2 ³ / ₈	9 ⁵ / ₈	6	1 ¹ / ₈	1 ¹ / ₈	1 ¹ / ₈	1 ¹ / ₈
16	2 ¹ / ₂	8 ³ / ₈	7 ⁵ / ₈	7 ³ / ₈	1 ³ / ₈	6	1 ¹ / ₈	2 ⁵ / ₈	17 ¹ / ₈	8 ³ / ₈	7 ⁵ / ₈	2 ¹ / ₂	6	14	18 ¹ / ₈	8 ³ / ₈	7 ³ / ₄	2 ³ / ₈	9 ⁵ / ₈	6	1 ¹ / ₈	1 ¹ / ₈	1 ¹ / ₈	1 ¹ / ₈

FOR OPERATION OF TWO SERIES MAZDA LAMPS (IN SERIES)

Form B-6

Form B-16

Form A-3

1000+1000/2500+2500
2500+2500/4000+4000
4000+4000/6000+6000
6000+6000/10000+10000
10000+10000/15000+15000

Form B-6										Form A-3															
15 ³ / ₄	2 ¹ / ₂	8 ³ / ₈	5 ¹¹ / ₃₂	7 ³ / ₈	1 ³ / ₈	6	1 ¹ / ₈	1 ⁷ / ₈	16 ¹ / ₈	8 ³ / ₈	5 ¹¹ / ₃₂	2 ¹ / ₂	6	14	17 ¹¹ / ₁₆	8 ³ / ₈	6	2 ³ / ₈	9 ⁵ / ₈	6	1 ¹ / ₈	1 ¹ / ₈	1 ¹ / ₈		
16 ³ / ₄	2 ¹ / ₂	8 ³ / ₈	7 ⁵ / ₈	7 ³ / ₈	1 ³ / ₈	6	1 ¹ / ₈	2 ⁵ / ₈	16 ¹ / ₈	8 ³ / ₈	7 ⁵ / ₈	2 ¹ / ₂	6	14	17 ¹¹ / ₁₆	8 ³ / ₈	6	2 ³ / ₈	9 ⁵ / ₈	6	1 ¹ / ₈	1 ¹ / ₈	1 ¹ / ₈		
15 ³ / ₄	2 ¹ / ₂	8 ³ / ₈	5 ¹¹ / ₃₂	7 ³ / ₈	1 ³ / ₈	6	1 ¹ / ₈	1 ⁷ / ₈	16 ¹ / ₈	8 ³ / ₈	5 ¹¹ / ₃₂	2 ¹ / ₂	6	14	17 ¹¹ / ₁₆	8 ³ / ₈	6	2 ³ / ₈	9 ⁵ / ₈	6	1 ¹ / ₈	1 ¹ / ₈	1 ¹ / ₈		
16	2 ¹ / ₂	8 ³ / ₈	7 ⁵ / ₈	7 ³ / ₈	1 ³ / ₈	6	1 ¹ / ₈	2 ⁵ / ₈	17 ¹ / ₈	8 ³ / ₈	7 ⁵ / ₈	2 ¹ / ₂	6	14	18 ¹ / ₈	8 ³ / ₈	7 ³ / ₄	2 ³ / ₈	9 ⁵ / ₈	6	1 ¹ / ₈	1 ¹ / ₈	1 ¹ / ₈		
23 ¹ / ₈	2 ¹ / ₂	15 ³ / ₄	7 ⁵ / ₈	7 ³ / ₈	1 ³ / ₈	6	1 ¹ / ₈	2 ⁵ / ₈	24 ¹ / ₄	15 ³ / ₄	7 ⁵ / ₈	2 ¹ / ₂	6	16	22 ¹ / ₈	15 ³ / ₄	7 ⁵ / ₈	7 ³ / ₄	3 ¹ / ₈	9 ¹ / ₄	10 ³ / ₄	8	6	1 ¹ / ₈	1 ¹ / ₈

FOR OPERATION OF TWO SERIES MAZDA LAMPS (IN MULTIPLE)

Form B-8

Form B-17

Form A-4

1000/2500
1000/2500
2500/4000
2500/4000
4000/6000
4000/6000
6000/10000
6000/10000
10000/15000
10000/15000

Form B-1									Form A-1																
18 $\frac{3}{8}$	2 $\frac{1}{2}$	11 $\frac{3}{8}$	5 $\frac{11}{32}$	7 $\frac{3}{8}$	1 $\frac{1}{8}$	6	1 $\frac{1}{8}$	1 $\frac{7}{8}$	19 $\frac{3}{8}$	11 $\frac{3}{8}$	5 $\frac{11}{32}$	2 $\frac{1}{2}$	6	14	20 $\frac{1}{8}$	11 $\frac{3}{8}$	..	6	2 $\frac{3}{8}$	..	..	..	6	1 $\frac{1}{8}$	1 $\frac{7}{8}$
23 $\frac{1}{8}$	2 $\frac{1}{2}$	15 $\frac{3}{4}$	5 $\frac{11}{32}$	7 $\frac{3}{8}$	1 $\frac{1}{8}$	6	1 $\frac{1}{8}$	1 $\frac{7}{8}$	24 $\frac{1}{4}$	15 $\frac{3}{4}$	5 $\frac{11}{32}$	2 $\frac{1}{2}$	6	15	22 $\frac{1}{8}$	15 $\frac{3}{4}$	5 $\frac{11}{32}$	6 $\frac{1}{8}$	5 $\frac{3}{4}$	7 $\frac{1}{2}$	9	..	..	..	
23 $\frac{1}{8}$	2 $\frac{1}{2}$	15 $\frac{3}{4}$	5 $\frac{11}{32}$	7 $\frac{3}{8}$	1 $\frac{1}{8}$	6	1 $\frac{1}{8}$	1 $\frac{7}{8}$	24 $\frac{1}{4}$	15 $\frac{3}{4}$	5 $\frac{11}{32}$	2 $\frac{1}{2}$	6	15	22 $\frac{1}{8}$	15 $\frac{3}{4}$	5 $\frac{11}{32}$	6 $\frac{1}{8}$	5 $\frac{3}{4}$	7 $\frac{1}{2}$	9	..	..	..	
23 $\frac{1}{8}$	2 $\frac{1}{2}$	15 $\frac{3}{4}$	5 $\frac{11}{32}$	7 $\frac{3}{8}$	1 $\frac{1}{8}$	6	1 $\frac{1}{8}$	1 $\frac{7}{8}$	24 $\frac{1}{4}$	15 $\frac{3}{4}$	5 $\frac{11}{32}$	2 $\frac{1}{2}$	6	15	22 $\frac{1}{8}$	15 $\frac{3}{4}$	5 $\frac{11}{32}$	6 $\frac{1}{8}$	5 $\frac{3}{4}$	7 $\frac{1}{2}$	9	..	..	..	
23 $\frac{1}{8}$	2 $\frac{1}{2}$	15 $\frac{3}{4}$	7 $\frac{5}{8}$	7 $\frac{3}{8}$	1 $\frac{7}{8}$	6	1 $\frac{7}{8}$	2 $\frac{5}{8}$	24 $\frac{1}{4}$	15 $\frac{3}{4}$	7 $\frac{5}{8}$	2 $\frac{1}{2}$	6	16	22 $\frac{1}{8}$	15 $\frac{3}{4}$	7 $\frac{5}{8}$	7 $\frac{3}{4}$	3 $\frac{1}{8}$	9 $\frac{1}{4}$	10 $\frac{3}{4}$	8	..	..	..

TYPE IL NOVALUX SERIES TRANSFORMERS

Methods of Mounting

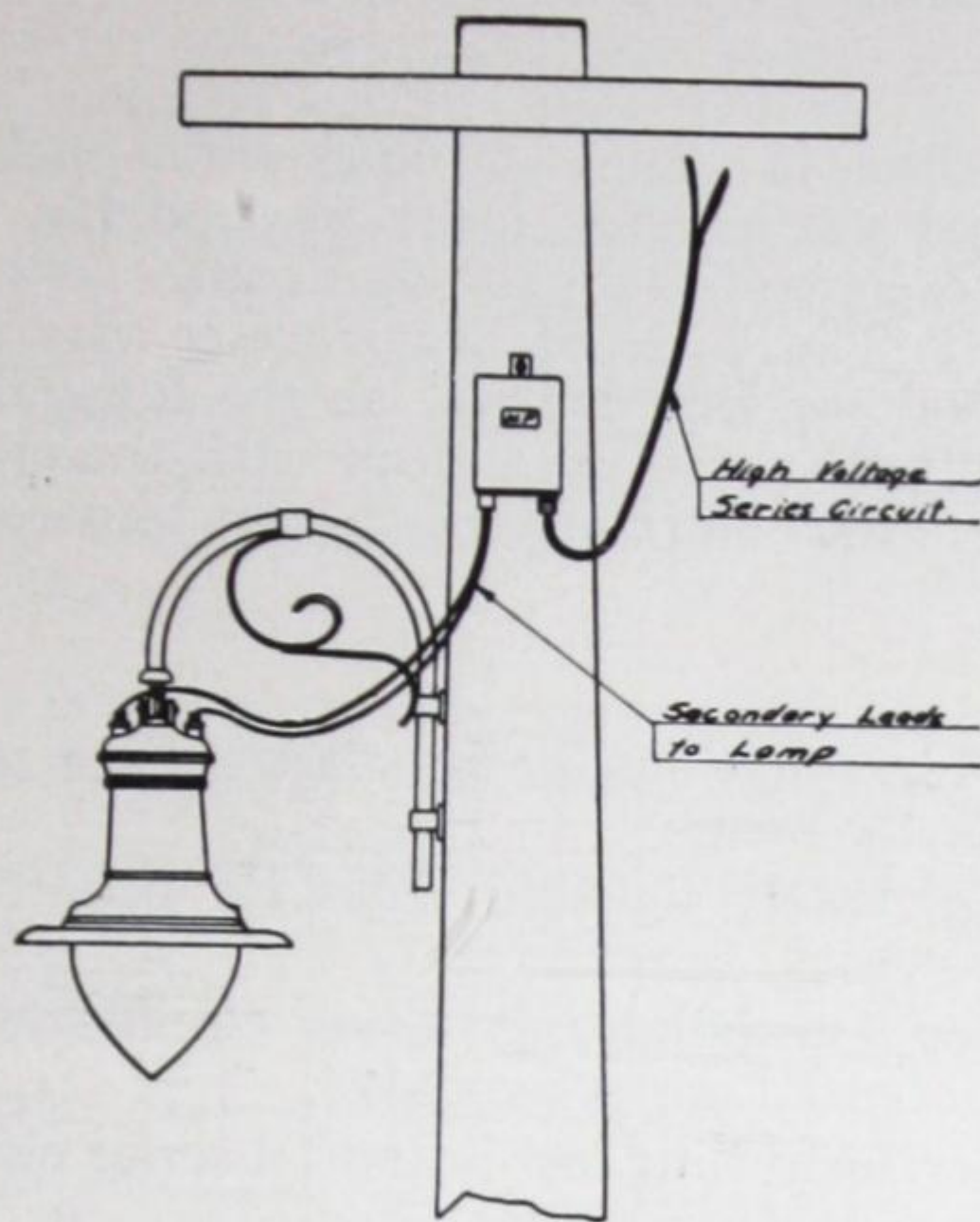


Fig. 18

Installation of IL transformer, aerial type

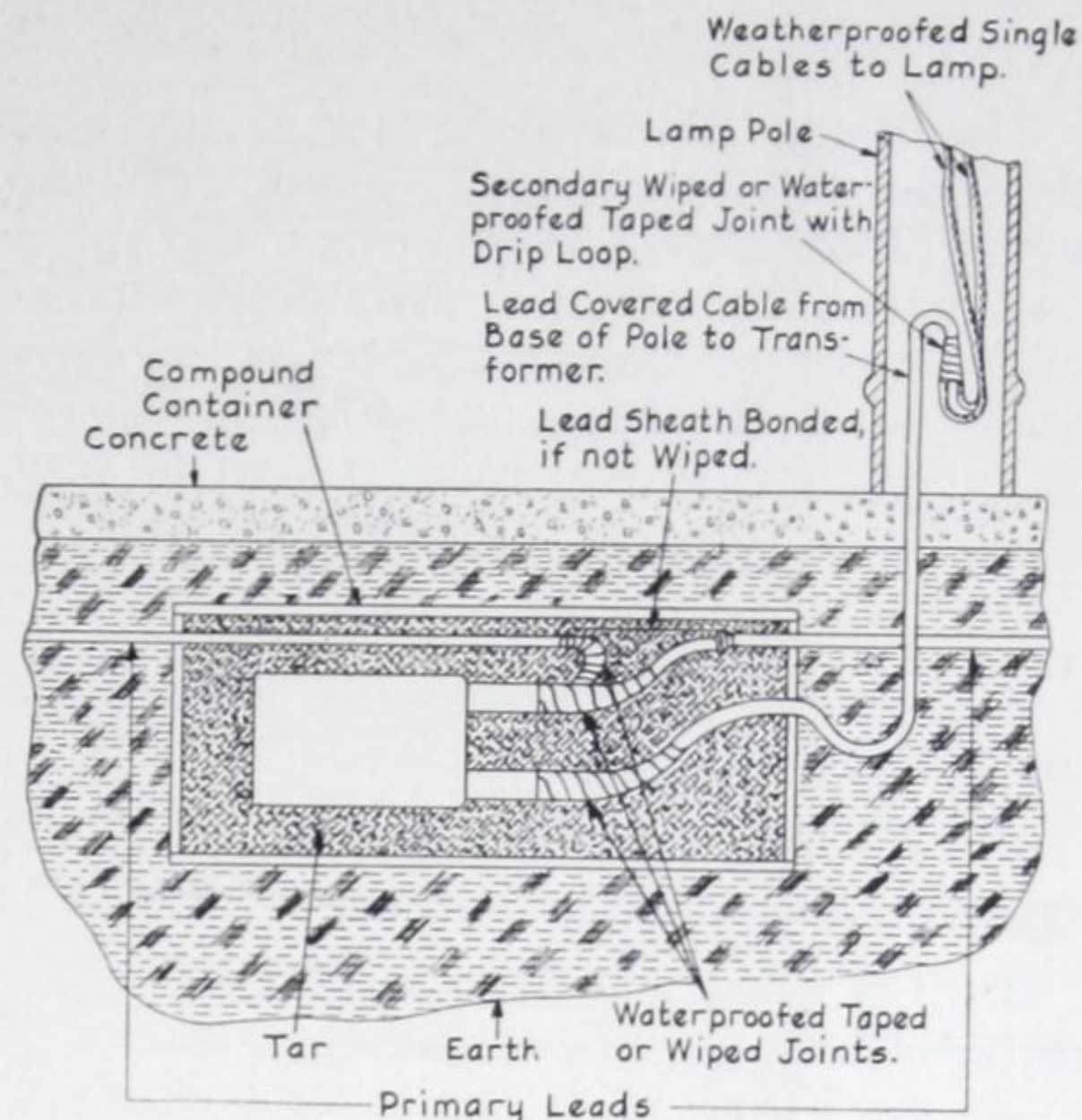
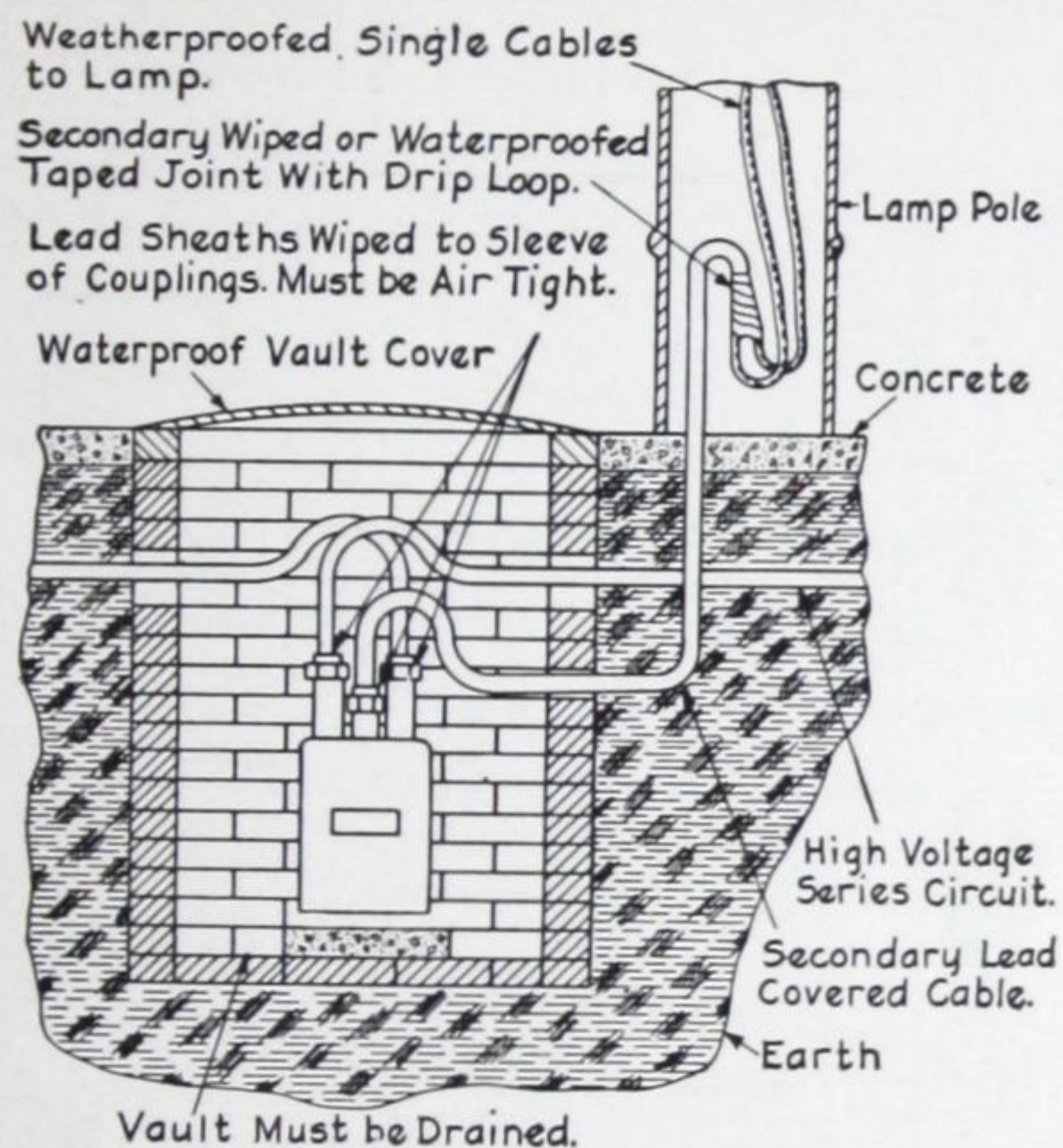


Fig. 19

Series transformers buried in ground



Vault Must be Drained.

Fig. 20

Installation of vault-type IL transformer

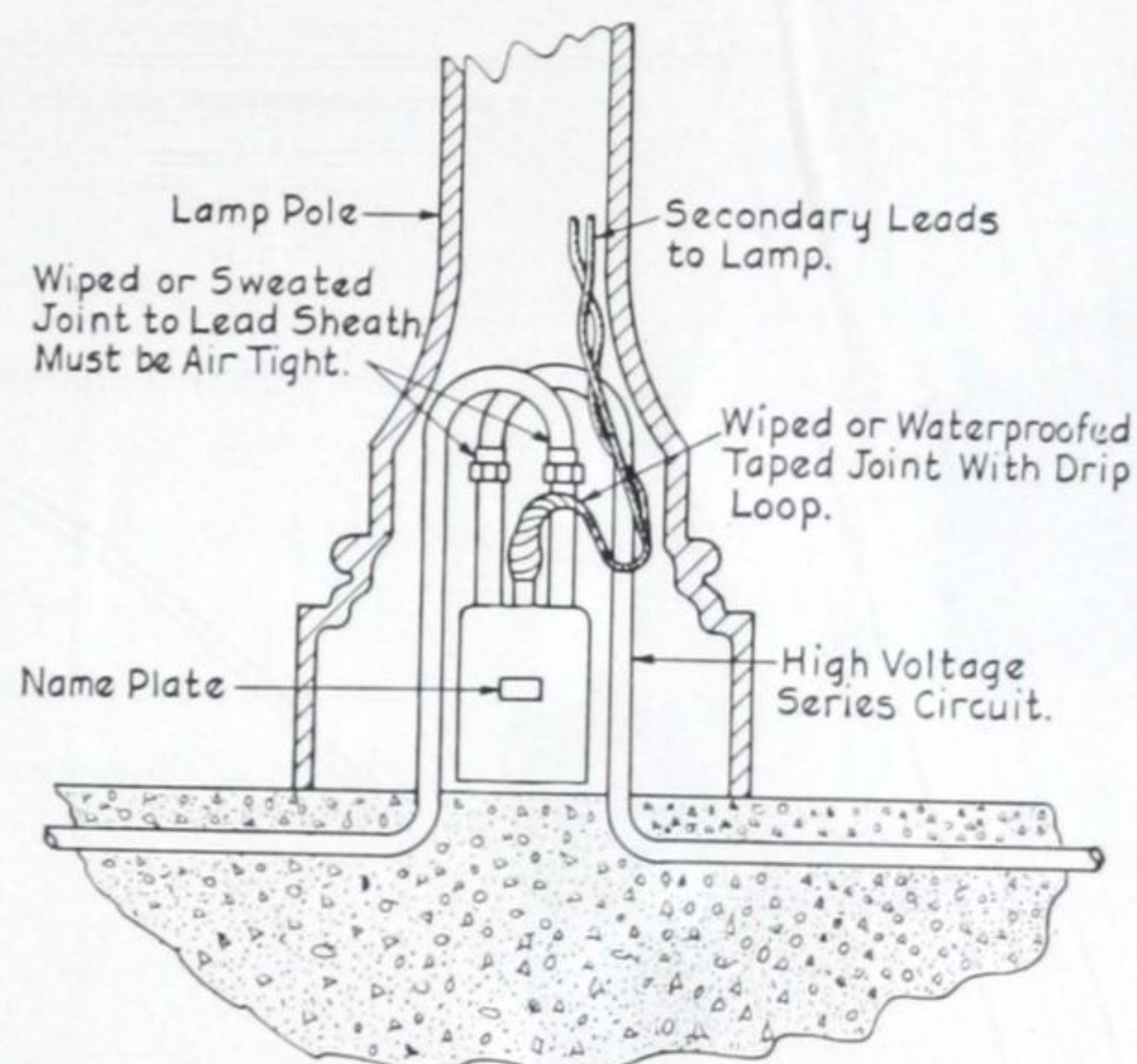


Fig. 21

Installation of IL transformer in base of pole

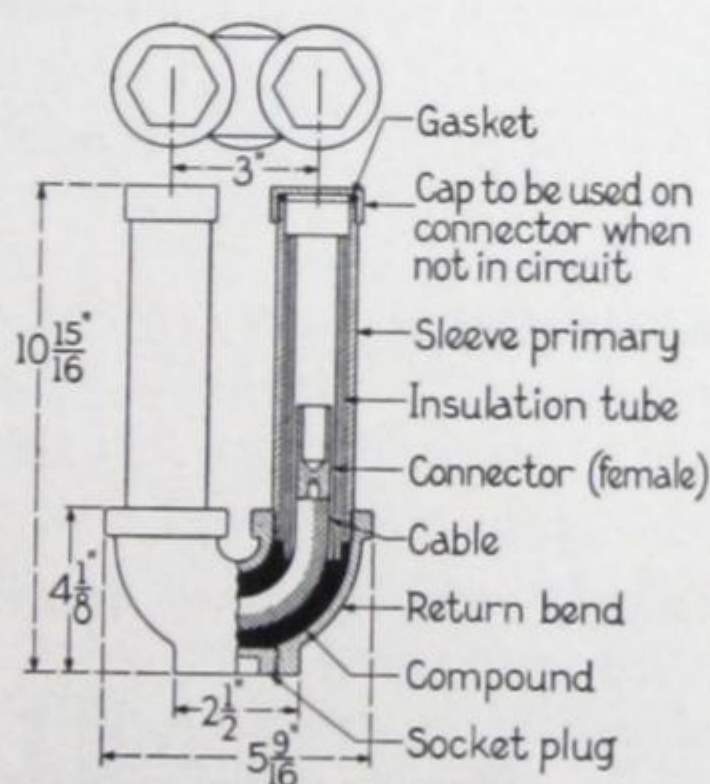


Fig. 22

Connector

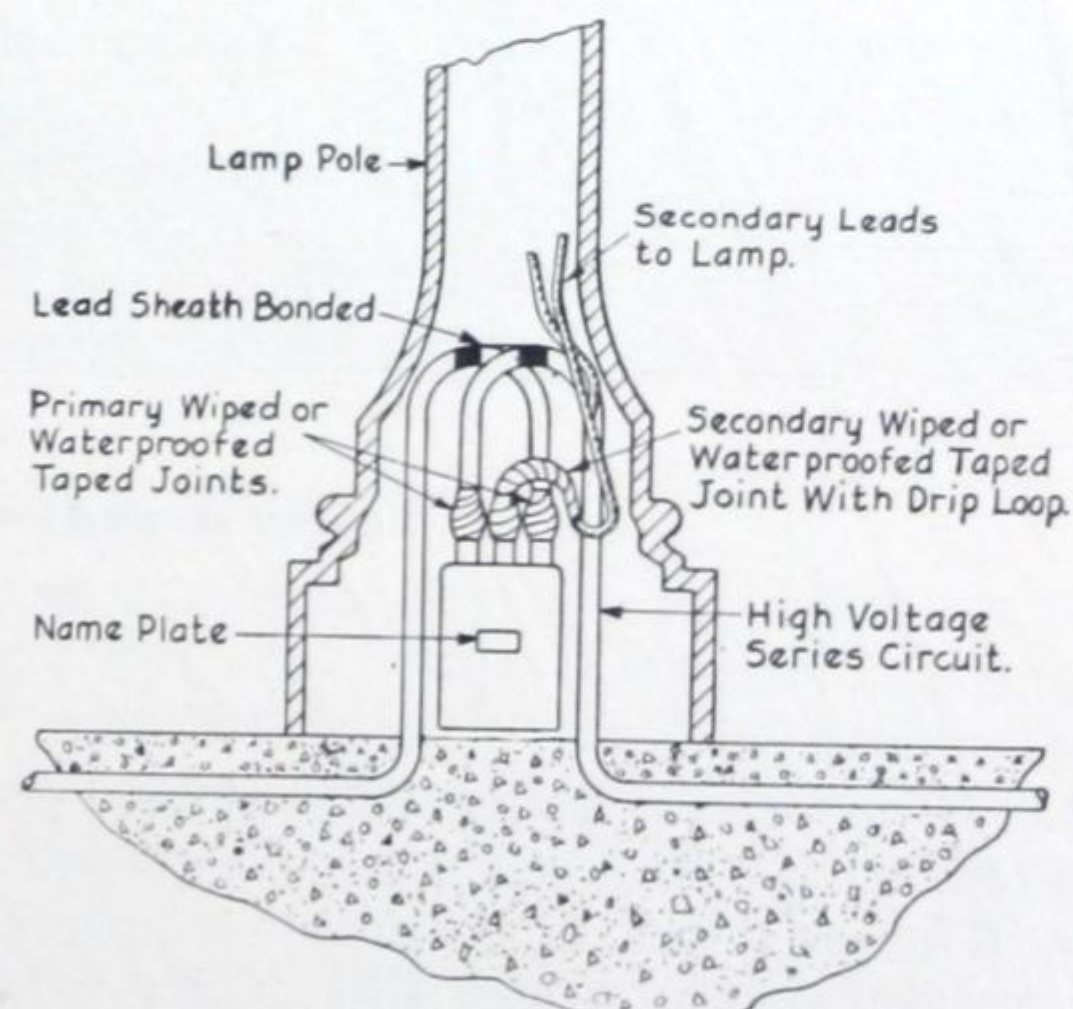


Fig. 23

Installation of IL transformer in base of pole

TYPE SL NOVALUX SERIES TRANSFORMERS

Subway and Aerial Types

FUNCTION

The Type SL transformer is an insulating transformer the primary winding of which is energized from a long series circuit and the secondary of which is used for supplying current to a small number of lamps connected in series and located where the high potential of the ordinary constant-current series circuit would be objectionable. Certain classes of lighting require lower

potential than is found on long series lighting circuits, and yet as they function similarly, it is desirable to control them simultaneously with the street lights. The Type SL transformer affords an ideal method for this control, as the low-voltage series circuit is turned on and off with the closing or opening of the main constant-current transformer circuit.

APPLICATION

Some of the places where SL transformers can be used to advantage are:

1. An isolated side street where it is desired to install a few series incandescent lamps.
2. On poles, elevated structures, etc., where high potentials are objectionable.
3. On bridges.
4. In underground circuits leading to ornamental poles.

5. In installations for fire-alarm boxes, police boxes, or letter boxes.

6. For safely lighting aisles for pedestrians in traffic zones.

7. For house-lighting series circuits where constant potential is not available.

8. For furnishing low-potential series circuits to concrete-pole installations.

9. For concrete-pole ornamental street-lighting installations.

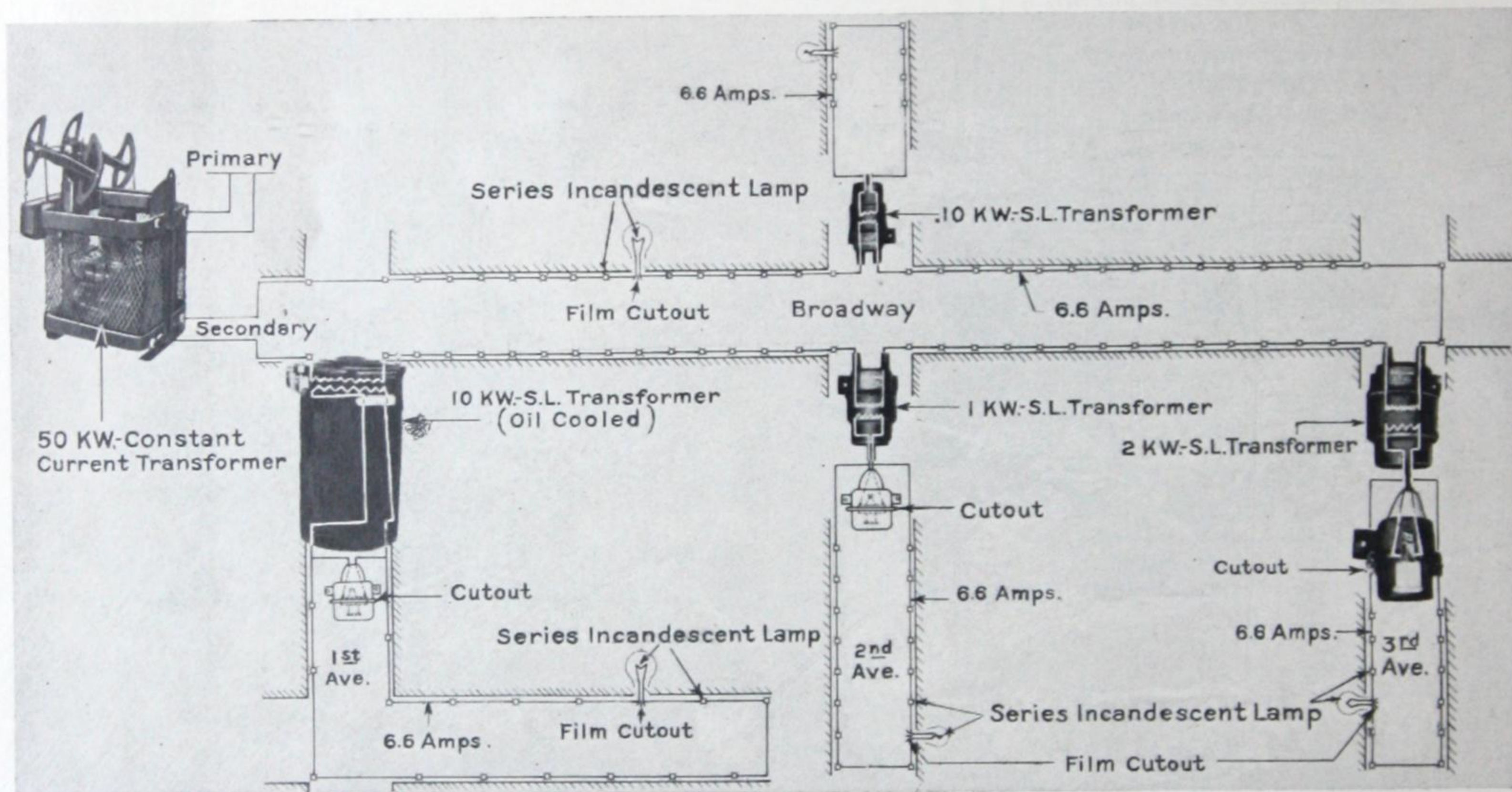


Fig. 1

Diagram showing low-voltage series circuits by series transformers

CHARACTERISTICS

1. When the primary current and frequency are rated value, the secondary current will be within 0.5 of 1 per cent plus or minus of the curve values shown under Fig. 2. By referring to these regulation curves, a transformer can now be

selected to supply any desired load between 100 watts and 10 kw inclusive.

2. All sizes up to and including 100 watts will operate on open circuit indefinitely without protective device. Above 100 watts a protective device

TYPE SL NOVALUX SERIES TRANSFORMERS

must be used. Protective devices for pole-type transformers are mounted separately and are not included as an integral part of the transformer.

3. Subway transformers in sizes from 250 watts to 4 kw inclusive have a protective device included as an integral part of the transformer. In sizes from 5 to 10 kw inclusive, the protective device is furnished as a separate piece of apparatus but is included in the price of the transformer.

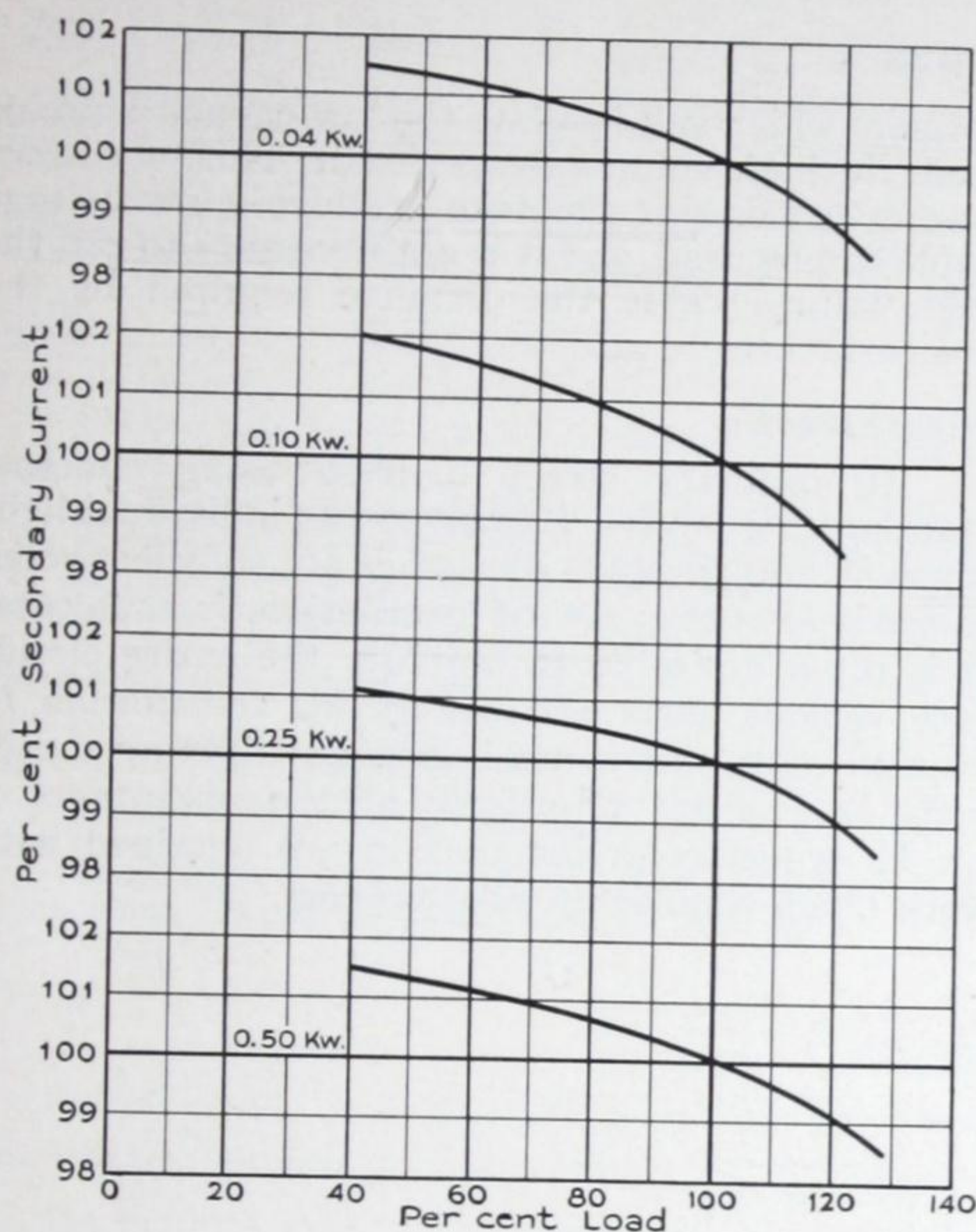
All transformers are given the following commercial tests before leaving the factory.

Ratio.

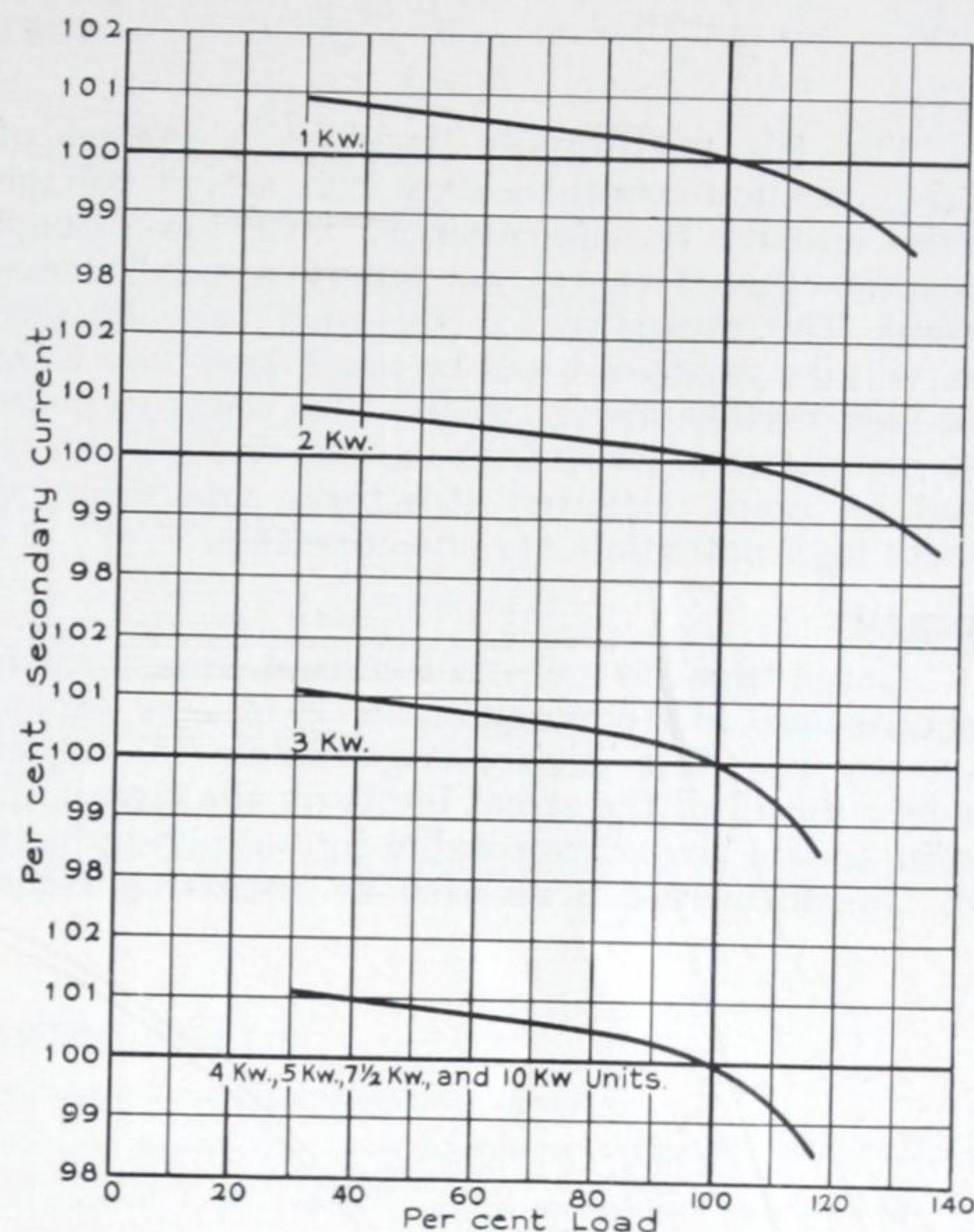
Induced-voltage (in excess of open-circuit voltage obtainable in service) and insulation tests are as follows:

22,000 volts between the primary winding and the secondary winding and core.

2500 volts from the secondary to the primary and core.



(H-2998099)



(H-2998098)

Fig. 2

Type SL transformer load-regulation curves

DESCRIPTION

TRANSFORMERS

Type SL transformers in sizes 100 watts to 4 kw inclusive are air-cooled; sizes from 5 to 10 kw inclusive are oil-cooled. On the pole-type transformers, sizes 100 watts to 4 kw inclusive, a very hard compound with a high flow point is used on the bushing end where the leads come out. This forms a gasket and seals the leads firmly in the bushing. The remainder of the casing is filled with a compound having a very low flow point and which is a very good heat conductor. The subway transformers in sizes from 100 watts to 4 kw inclusive are also filled with the low-flow-point compound.

The ends of the brass wiping sleeves are plugged with a tapered fiber bushing which holds the soft compound in the transformer.

The caps and bases of SL transformers, in sizes from 100 watts to 4 kw inclusive, are made

from copper-bearing sheet-drawn steel and are approximately $\frac{3}{32}$ in. thick. The end pieces and the casing are heavily galvanized and, in addition, are given a coating of weatherproof gray paint, which is applied after the parts are assembled. Transformers in sizes from 5 to 10 kw are oil-filled. All tanks are of welded steel.

PROTECTIVE DEVICES

These transformers are operated on loaded series systems, and, if the secondary is allowed to become open-circuited, a very high voltage will be obtained in the secondary because the series current in the primary will be the exciting current of the transformer. It is, therefore, recommended that a protective device be used on transformers from 250 watts to 10 kw inclusive. On the smaller sizes,

TYPE SL NOVALUX SERIES TRANSFORMERS

the open-circuit voltage is not high enough to be dangerous to insulation, operation, or safety. These protective devices are intended to eliminate the high-voltage secondary of the Type SL transformer on open circuit and to protect the secondaries from the high-voltage strain for a great length of time.

The film cutouts used in the protective devices for SL transformers, 2 kw and larger, are of a special design. These consist of two lead disks separated by an insulating washer, which has a hole

in the center. The lead disks and washer are held together with an insulating retaining ring.

When the secondary of the transformer is open-circuited, the open-circuit voltage of the transformer is impressed across the insulating washer, which is of such a thickness that this voltage will cause a breakdown, resulting in the lead flowing from one disk to another through the hole in the washer, thereby short-circuiting the secondary. The secondary will remain permanently shorted until a new film cutout is inserted between the clips of the plug.

ADVANTAGES

SAFETY

The SL transformer provides a means of taking constant-current energy from a high-voltage series circuit, transforming it into low-voltage constant-current energy to supply a small series circuit. This means that in the small installations, the voltage to ground will be much less than from the high-voltage series circuit. This tends to make the installation safe so that various circuits can be used on poles, elevated structures, and supports where high potentials are objectionable.

ECONOMY

Large-capacity constant-current transformers require very high-voltage cable. It is very expensive to use this high-voltage cable to supply energy for all of the street lights on the circuit. In order to use low-voltage cable for supplying light, SL transformers can be used as insulating trans-

formers which will insulate the low-capacity circuit from the high-voltage series circuit. This, of course, means that on side streets or in alleys, a low-voltage cable can be used, and it is not necessary to run the high-voltage cable the distance required by the entire circuit.

CONVENIENCE

In ordinary street lighting using concrete standards, it is very difficult to use individual light Type IL transformers as there is not sufficient room in the base of the pole for installation. In such cases it is often desirable to separate the entire circuit into various parts and use an SL transformer to furnish energy for a small group of lighting standards. In this way practically all the advantages of an IL transformer installation are obtained with very much smaller installation cost.

TYPE SL NOVALUX SERIES TRANSFORMERS

Subway and Aerial Types

For 60-cycle, 6.6-amp Constant-current Circuits

KW OUTPUT at Unity P-f Load	AERIAL TYPE				SUBWAY TYPE				* OPEN CIRCUIT EFFECTIVE VOLTAGE (APPROX)		FULL-LOAD EFFICIENCY BASED ON OPERATING TEMPERA- TURES AT 75 C	POWER FACTOR PER CENT
	INCLUDES PROTECTIVE DEVICE		APPROX WT IN LB		INCLUDES PROTECTIVE DEVICE		APPROX WT IN LB					
	Cat. No. (6.6-amp Primary and Secondary)	List Price Class GO-51	Ship.	Net	Cat. No. (6.6-amp Primary and Secondary)	List Price Class GO-51	Ship.	Net	6.6-amp Primary and Secondary	7.5-amp Primary and Secondary		
0.10	† 195589	\$31.00	24	9	† 195609	\$31.00	34	9	38	33	87.0	97.5
0.25	247012	48.00	36	15	† 224345	48.00	47	16	95	83	90.0	98.0
0.50	247013	51.00	38	21	† 224346	51.00	53	22	190	166	92.0	98.0
1.00	247014	66.00	68	43	† 224347	66.00	75	44	380	333	94.0	98.5
2.00	247015	78.00	83	61	† 224348	78.00	97	62	760	666	95.2	98.5
3.00	247016	100.00	126	96	† 245953	100.00	140	97	1340	1200	95.8	99.0
4.00	15X863	142.00	174	140	† 15X865	142.00	180	141	1820	1600	96.2	99.0
5.00	247018	191.00	290	281	247031	306.00	500	500	2650	2330	96.6	99.0
7.50	247019	234.00	400	390	247032	336.00	540	540	3980	3500	96.9	99.0
10.00	247020	264.00	470	470	247033	366.00	570	570	5300	4660	97.2	99.0

- For 7.5-ampere primary and secondary, 15-ampere primary and secondary, and 20-ampere primary and secondary, use 6.6-amp prices.
- For double-rating 6.6/7.5-ampere primary only, add 25 per cent.
- For double-rating 15/20 ampere secondary only, add 25 per cent.
- For other special ratings and frequencies, refer to nearest sales office.
- Luminaires with series sockets and film cutouts must be used with these transformers.
- Both pole- and subway-type transformers of standard ratings, up to and including 4-kw sizes, are compound-filled and are air-cooled by surface radiation. The 5-, 7.5-, and 10-kw sizes are oil-filled.

* The maximum voltage which can be observed by means of a voltmeter. The peak voltage on open circuit, as shown by oscillograph, may rise to at least five times this value and, as a safety measure, the use of a protective device is essential.

† Protective device not required and not included in Cat. No. or List Price.

‡ Protective device is assembled in cap of transformer.

Suspension hooks are furnished with all Type SL transformers which have a capacity of over 4 kw. If crossarm suspension is required, specify hanger brackets.

LAMP CAPACITY (APPROXIMATE)

(6.6 or 7.5 Amp Only—60 Cycles—For Other Ratings, refer to the nearest sales office)

KW OUTPUT at Unity P-f Load	NUMBER OF STRAIGHT SERIES LAMPS WITH FILM CUTOUTS													
	6.6 Amp							7.5 Amp						
	400 Lumens	600 Lumens	800 Lumens	1000 Lumens	2500 Lumens	4000 Lumens	6000 Lumens	400 Lumens	600 Lumens	800 Lumens	1000 Lumens	2500 Lumens	4000 Lumens	6000 Lumens
0.040	0	0	0	0	0	0	0	2	2	0	0	0	0	0
0.100	3	2	0	0	0	0	0	6	5	4	3	0	0	0
0.250	7	5	4	3	0	0	0	13	10	8	7	3	2	0
0.500	15	11	9	7	3	2	0	25	20	17	14	6	4	0
1.000	28	22	17	14	6	4	2	51	40	33	28	12	8	5
2.000	57	43	34	29	12	8	5	77	60	50	43	18	12	8
3.000	86	65	52	43	18	12	8	103	80	67	57	25	16	11
4.000	115	87	69	58	25	16	11	129	100	84	71	31	20	14
5.000	143	109	86	72	31	20	14	194	150	126	108	47	30	21
7.500	215	164	130	109	46	30	21	259	201	169	143	63	40	28
10.000	287	218	173	145	62	41	28							

Capacities 0.10 to 0.500 kw—no allowance for line losses.

Capacities 1.0 to 10.0 kw inclusive—5 per cent allowance for line losses.

When Type IL transformers are to be operated on secondary of Type SL transformers, refer to nearest sales office for recommendation.

TYPE SL NOVALUX SERIES TRANSFORMERS

†°PROTECTIVE DEVICE WITHOUT FILM CUTOUTS
(△Same for all Kw ratings)



Fig. 3
(Photograph 393277)
Pole type
less than 5 kw

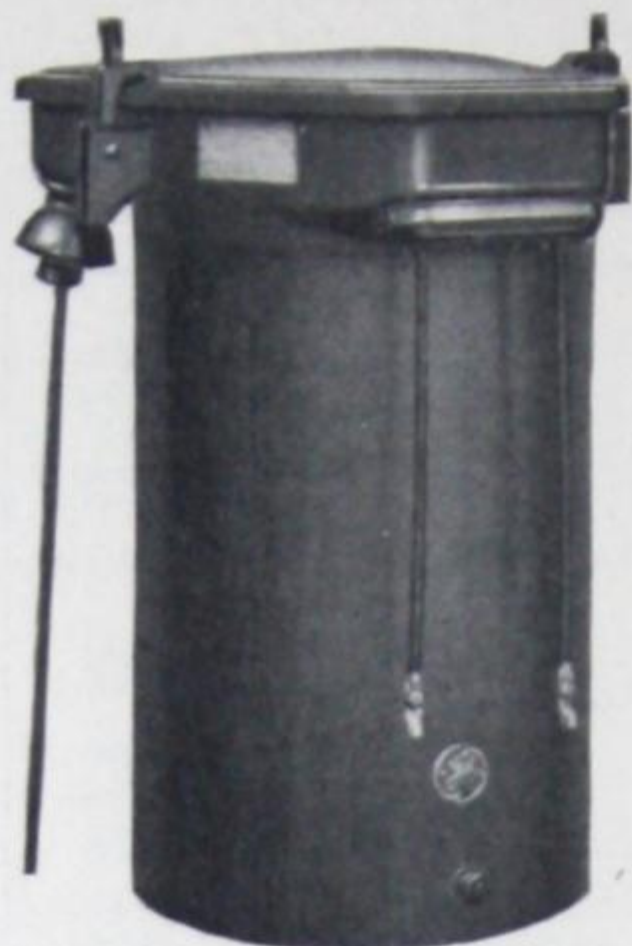


Fig. 4
(Photograph 775114)
Pole type—oil-filled
5 to 10 kw



Fig. 5
(Photograph 299095)
Subway type
less than 5 kw
(with self-contained
protective device)



Fig. 6
(Photograph 393446)
Subway type—oil-filled
5 to 10 kw



Fig. 7
(Photograph 393921)
Pole type—protective
device



Fig. 8
(Photograph 393279)
Plug and automatic
film cutout—used in
pole- and subway-type
protective devices



Fig. 9
(Photograph 779072)
Subway-type
protective device

POLE TYPE

SUBWAY TYPE

Cat. No.	List Price Class GO-51	APPROX WT IN LB		Cat. No.	List Price Class GO-51	APPROX WT IN LB	
		Ship.	Net			Ship.	Net
224461	\$7.50	10	7	5207688G1	\$24.00	7	

FILM CUTOUT CAT. NUMBERS AND SECONDARY FULL-LOAD VOLTAGES

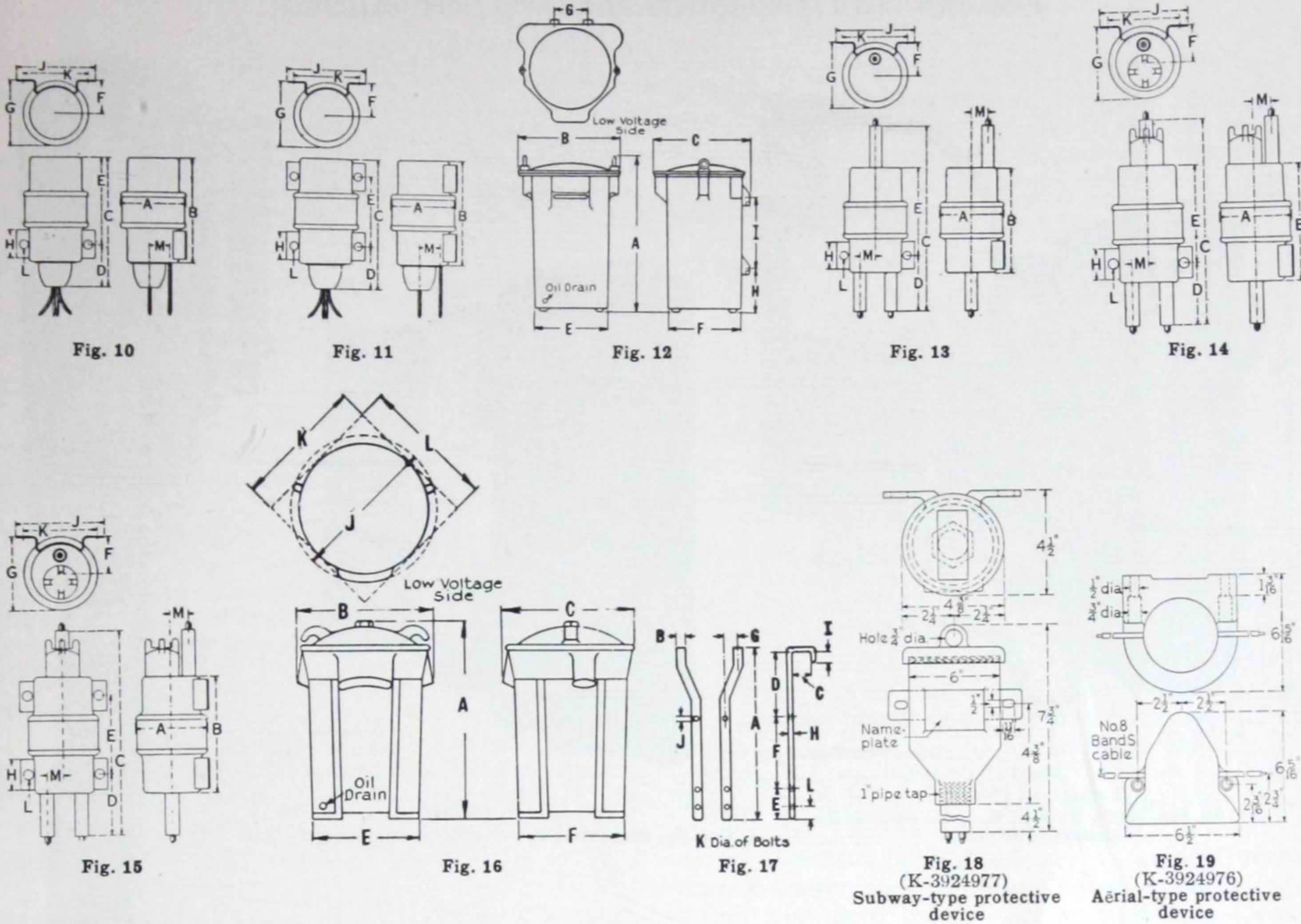
Kw Rating	Volts	Cat. No.	Volts	Cat. No.	List Price Per Doz. Class GO-51
6.6 Amp			7.5 Amp		
.10	15		13	4815602G1	\$6.50/C
.25	37	4815602G1	33	4815602G1	6.50/C
.50	75	4815602G1	66	3986079G1	3.60
1.0	151	3986079G1	133	3986079G3	3.60
2.0	303	3986079G3	267	3986079G4	3.60
3.0	454	3986079G4	400	3986079G4	3.60
4.0	606	3986079G5	533	3986079G4	3.60
5.0	757	3986079G6	666	3986079G5	3.60
7.5	1136	3986079G7	1000	3986079G7	3.60
10.0	1510	3986079G8	1333	3986079G7	3.60
15 Amp			20 Amp		
.10	6		5		
.25	16		12		
.50	33	4815602G1	25		\$6.50/C
1.0	66	4815602G1	50	4815602G1	6.50/C
2.0	133	3986079G1	100	3986079G1	3.60
3.0	200	3986079G2	150	3986079G1	3.60
4.0	267	3986079G3	200	3986079G2	3.60
5.0	333	3986079G3	250	3986079G2	3.60
7.5	500	3986079G4	375	3986079G4	3.60
10.0	666	3986079G5	500	3986079G4	3.60

° Protective devices are included in the Cat. No. and price of the SL transformer except as noted. This information is for ordering separate devices and film cutouts.

△On subway-type transformers of 0.25- to 4-kw capacity, protective device is assembled in cap of transformer.

† When the secondary current exceeds 7.5-amp, a film cutout should be chosen the breakdown voltage of which is slightly less than the open-circuit voltage of the transformer. This open-circuit voltage varies inversely with the secondary current.

TYPE SL NOVALUX SERIES TRANSFORMERS



Capacity of Trans in Kw	Tank Symbol	Style of Tank	Fig. No.	OIL		DIMENSIONS IN INCHES												
				Gal	Qual	A	B	C	D	E	F	G	H	I	J	K	L	M
POLE TYPE																		
.04	.....	.....	10	....	.....	4 ³ / ₈	6 ⁵ / ₈	8 ⁵ / ₁₆	2 ⁷ / ₈	5 ⁷ / ₁₆	2 ³ / ₈	4 ⁹ / ₁₆	1 ⁷ / ₈	....	5 ¹ / ₄	4 ¹ / ₄	15 ¹ / ₁₆	1 ⁷ / ₁₆
.10	.....	.....	10	....	.....	4 ³ / ₈	8 ¹ / ₈	9 ¹³ / ₁₆	2 ⁷ / ₈	6 ¹⁵ / ₁₆	2 ³ / ₈	4 ⁹ / ₁₆	1 ⁷ / ₈	....	5 ¹ / ₄	4 ¹ / ₄	15 ¹ / ₁₆	1 ⁷ / ₁₆
.25	.....	.....	10	....	.....	5 ¹⁵ / ₁₆	8 ¹ / ₁₆	9 ³ / ₄	3	6 ³ / ₄	3 ¹ / ₄	6 ⁷ / ₃₂	2 ³ / ₁₆	....	6 ¹ / ₂	5 ¹ / ₄	13 ³ / ₃₂	1 ²³ / ₃₂
.50	.....	.....	10	....	.....	5 ¹⁵ / ₁₆	10 ¹ / ₁₆	11 ³ / ₄	3	8 ³ / ₄	3 ¹ / ₄	6 ⁷ / ₃₂	2 ³ / ₁₆	....	6 ¹ / ₂	5 ¹ / ₄	13 ³ / ₃₂	1 ²³ / ₃₂
1.00	.....	.....	10	....	.....	8 ¹ / ₄	10	11 ¹¹ / ₁₆	3 ¹¹ / ₃₂	8 ¹¹ / ₃₂	4 ³ / ₈	8 ¹ / ₂	2 ¹ / ₂	....	8	6 ³ / ₄	1 ¹ / ₄	2 ¹¹ / ₃₂
2.00	.....	.....	10	....	.....	8 ¹ / ₄	13	14 ¹¹ / ₁₆	3 ¹¹ / ₃₂	11 ¹¹ / ₃₂	4 ³ / ₈	8 ¹ / ₂	2 ¹ / ₂	....	8	6 ³ / ₄	1 ¹ / ₄	2 ¹¹ / ₃₂
3.00	.....	.....	11	....	.....	8 ¹ / ₄	15	16 ¹¹ / ₁₆	3 ¹¹ / ₃₂	11 ¹¹ / ₁₆	4 ³ / ₈	8 ¹ / ₂	2 ¹ / ₂	....	8	6 ³ / ₄	1 ¹ / ₄	2 ¹¹ / ₃₂
4.00	.....	.....	11	....	.....	8 ¹ / ₄	22 ¹ / ₂	24 ³ / ₁₆	3 ¹¹ / ₃₂	19 ³ / ₁₆	4 ³ / ₈	8 ¹ / ₂	2 ¹ / ₂	....	8	6 ³ / ₄	1 ¹ / ₄	2 ¹¹ / ₃₂
5.00	WSO-14-2500	Smooth	12	7 ¹ / ₂	No. 10-C	26 ¹ / ₂	18 ³ / ₄	18 ³ / ₄	.....	14 ¹ / ₄	14 ¹ / ₄	6	6 ³ / ₄	9	.....	.....	.....	.....
7.50	WSO-14-2700	Smooth	12	8	No. 10-C	28 ¹ / ₄	18 ³ / ₄	18 ³ / ₄	.....	14 ¹ / ₄	14 ¹ / ₄	6	8 ¹ / ₂	9	.....	.....	.....	.....
10.00	WSO-16-2500	Smooth	12	13 ¹ / ₂	No. 10-C	32	22	21 ¹ / ₂	.....	16 ¹ / ₂	16 ¹ / ₂	6 ¹ / ₄	8 ¹ / ₈	12 ³ / ₈	.....	.....	.....	.....
SUBWAY TYPE																		
.04	.....	.....	13	....	.....	4 ³ / ₈	7 ⁵ / ₈	14 ¹ / ₈	4 ⁷ / ₁₆	6 ⁷ / ₁₆	2 ³ / ₈	4 ⁹ / ₁₆	1 ⁷ / ₈	....	5 ¹ / ₄	4 ¹ / ₄	15 ¹ / ₁₆	1
.10	.....	.....	13	....	.....	4 ³ / ₈	9 ¹ / ₈	15 ⁵ / ₈	4 ⁷ / ₁₆	7 ¹⁵ / ₁₆	2 ³ / ₈	4 ⁹ / ₁₆	1 ⁷ / ₈	....	5 ¹ / ₄	4 ¹ / ₄	15 ¹ / ₁₆	1
.25	.....	.....	14	....	.....	5 ¹⁵ / ₁₆	9 ⁹ / ₁₆	19 ¹ / ₁₆	4 ⁹ / ₁₆	8 ¹ / ₄	3 ¹ / ₄	6 ⁷ / ₃₂	2 ³ / ₁₆	....	6 ¹ / ₂	5 ¹ / ₄	13 ³ / ₃₂	1 ¹⁷ / ₃₂
.50	.....	.....	14	....	.....	5 ¹⁵ / ₁₆	11	20 ¹ / ₂	4 ⁹ / ₁₆	9 ¹¹ / ₁₆	3 ¹ / ₄	6 ⁷ / ₃₂	2 ³ / ₁₆	....	6 ¹ / ₂	5 ¹ / ₄	13 ³ / ₃₂	1 ¹⁷ / ₃₂
1.00	.....	.....	15	....	.....	8 ¹ / ₄	11	20 ¹ / ₂	4 ²⁹ / ₃₂	9 ¹¹ / ₃₂	4 ³ / ₈	8 ¹ / ₂	2 ¹ / ₂	....	8	6 ³ / ₄	1 ¹ / ₄	1 ²⁵ / ₃₂
2.00	.....	.....	15	....	.....	8 ¹ / ₄	14	23 ¹ / ₂	4 ²⁹ / ₃₂	12 ¹¹ / ₃₂	4 ³ / ₈	8 ¹ / ₂	2 ¹ / ₂	....	8	6 ³ / ₄	1 ¹ / ₄	1 ²⁵ / ₃₂
3.00	.....	.....	15	....	.....	8 ¹ / ₄	16	25 ¹ / ₂	4 ²⁹ / ₃₂	12 ¹¹ / ₁₆	4 ³ / ₈	8 ¹ / ₂	2 ¹ / ₂	....	8	6 ³ / ₄	1 ¹ / ₄	1 ²⁵ / ₃₂
4.00	.....	.....	15	....	.....	8 ¹ / ₄	23 ¹ / ₂	33	4 ²⁹ / ₃₂	20 ³ / ₁₆	4 ³ / ₈	8 ¹ / ₂	2 ¹ / ₂	....	8	6 ³ / ₄	1 ¹ / ₄	1 ²⁵ / ₃₂
5.00	CP-117- ¹ / ₂	Smooth	16	13 ³ / ₄	No. 10-C	35 ⁵ / ₈	18 ³ / ₄	18 ³ / ₄	.....	16 ³ / ₄	14 ³ / ₄	.....	.....	.....	*19 ¹ / ₂	†18 ³ / ₄	†18 ³ / ₄	.....
7.50	CP-117- ¹ / ₂	Smooth	16	12 ³ / ₄	No. 10-C	35 ⁵ / ₈	18 ³ / ₄	18 ³ / ₄	.....	16 ³ / ₄	14 ³ / ₄	.....	.....	.....	*19 ¹ / ₂	†18 ³ / ₄	†18 ³ / ₄	.....
10.00	CP-117- ¹ / ₂	Smooth	16	11 ³ / ₄	No. 10-C	35 ⁵ / ₈	18 ³ / ₄	18 ³ / ₄	.....	16 ³ / ₄	14 ³ / ₄	.....	.....	.....	*19 ¹ / ₂	†18 ³ / ₄	†18 ³ / ₄	.....
SUSPENSION HOOKS FOR POLE-TYPE TRANSFORMERS																		
5.00	1	.....	17	....	.....	28 ¹ / ₄	2	4	14 ¹ / ₈	4 ⁵ / ₈	9	3 ⁵ / ₈	5 ¹ / ₁₆	1 ³ / ₄	9 ¹ / ₁₆	7 ¹ / ₁₆	2	.....
7.50	2	.....	17	....	.....	28 ¹ / ₄	2	4	14 ³ / ₈	4 ⁵ / ₈	9	3 ⁵ / ₈	5 ¹ / ₁₆	1 ³ / ₄	9 ¹ / ₁₆	7 ¹ / ₁₆	2	.....
10.00	3	.....	17	....	.....	37	2	4	11 ⁷ / ₈	12 ¹ / ₄	12 ³ / ₈	4 ³ / ₄	1 ¹ / ₂	1 ¹ / ₂	3 ⁴ / ₄	5 ⁸ / ₈	2	.....

* Maximum diameter.
† Minimum rectangle.

G-E NOVALUX CUTOUT

For Type SL Transformers and Loop Sectionalizing

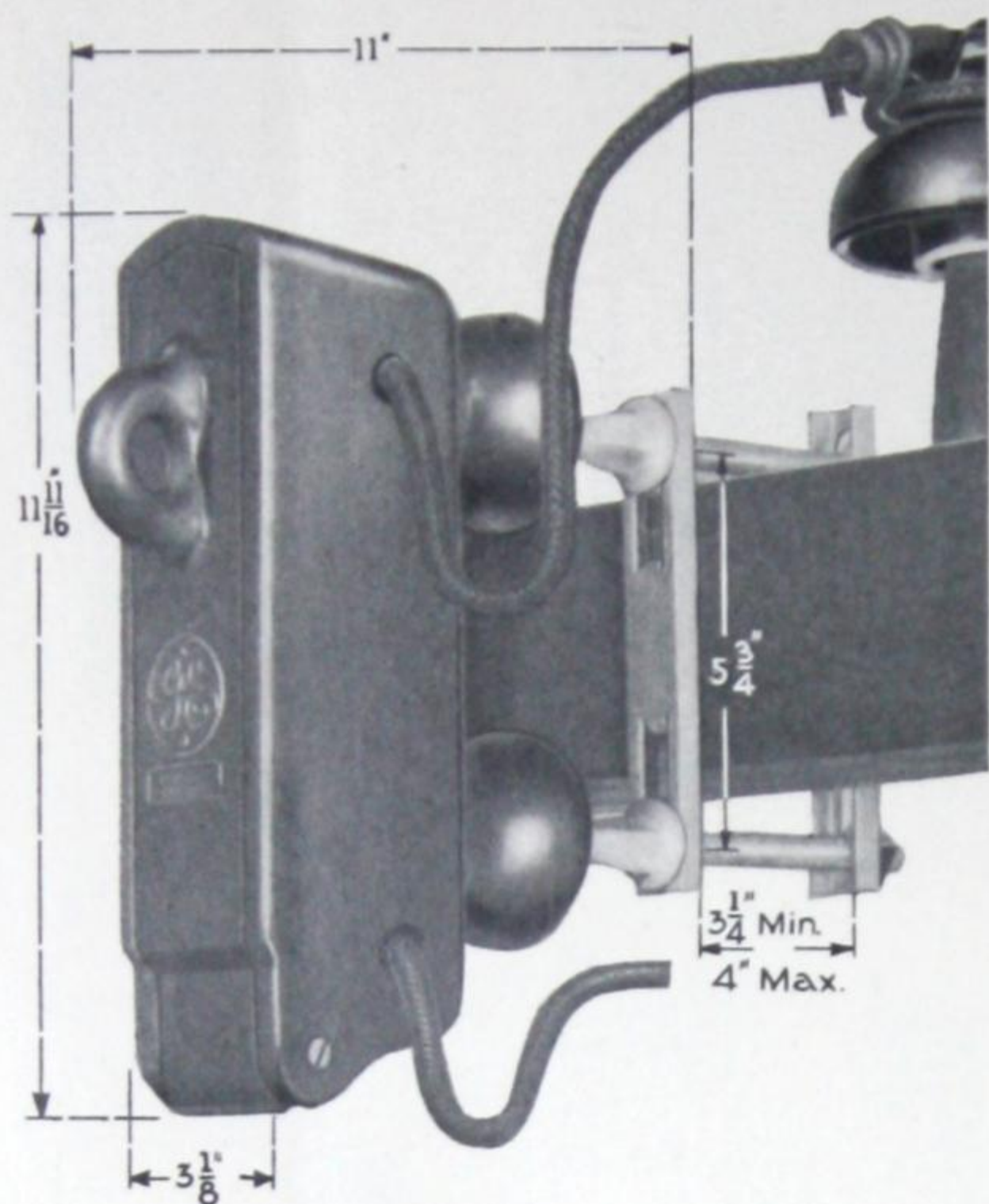


Fig. 1

(Photograph 480584)
Cat. No. 2991604G1 Novalux mounted on crossarm,
showing dimensions

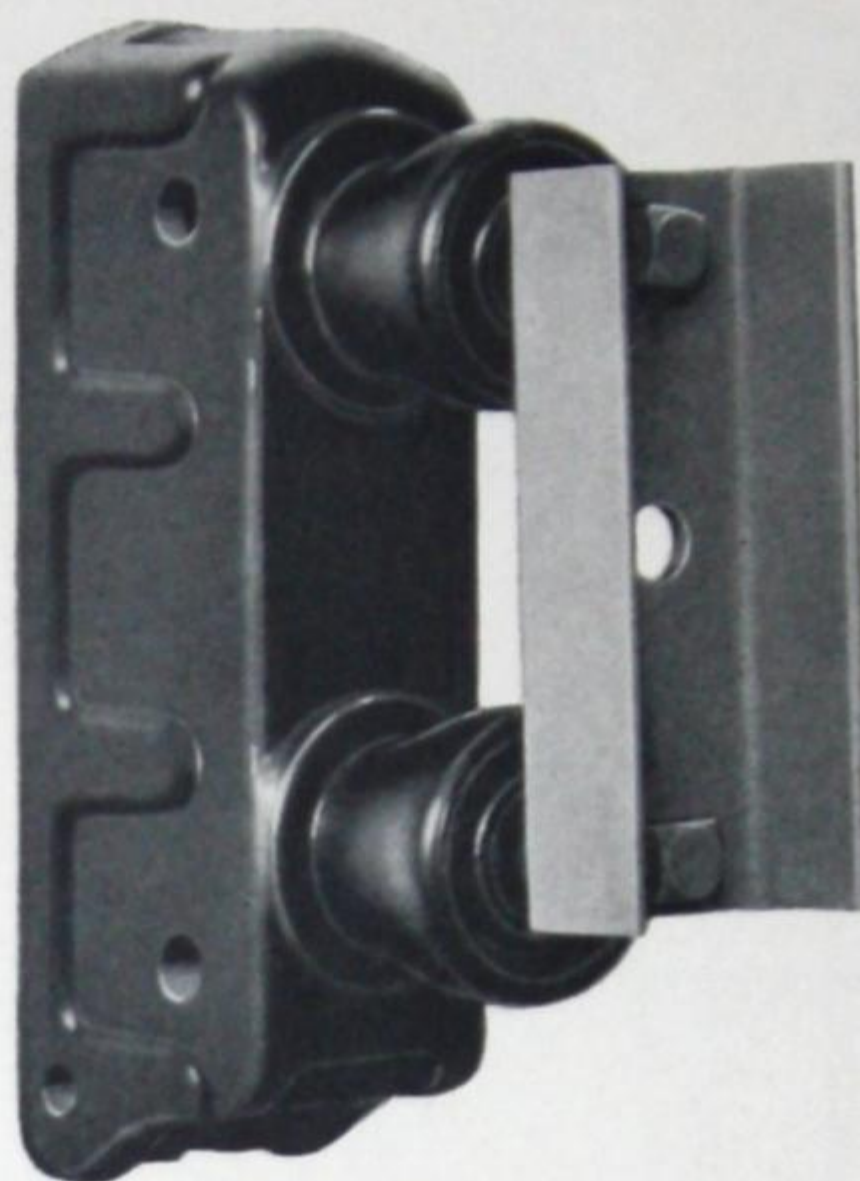


Fig. 2

(Photograph 776733)
Cat. No. 2991604G2 cutout with channel hanger

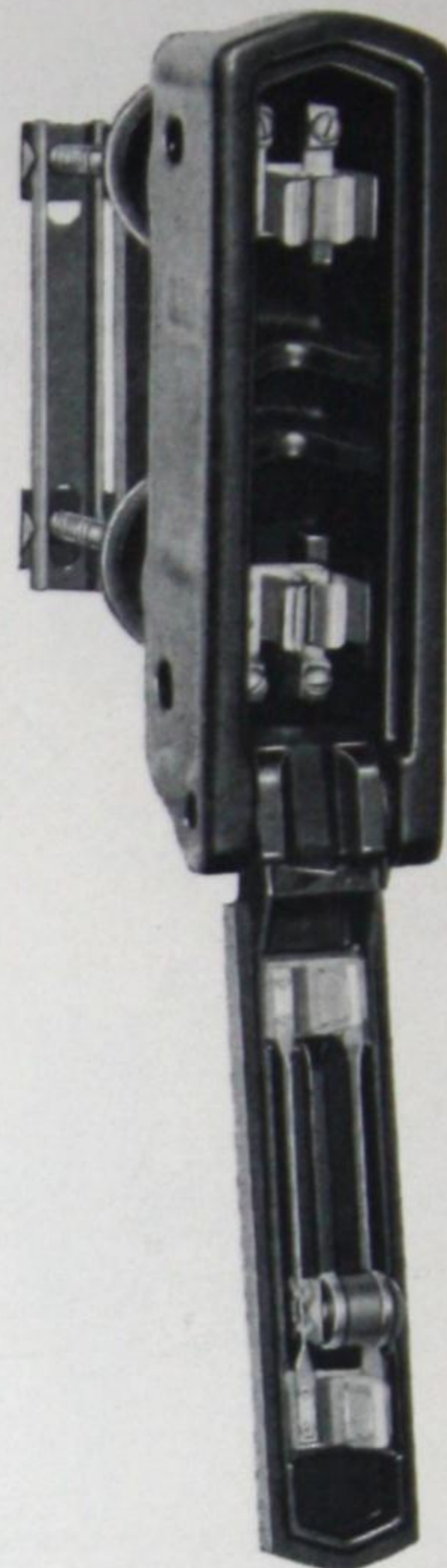


Fig. 3

(Photograph 777057)
Cat. No. 2991604G1 cutout
with Thyrite by-pass

APPLICATION

Disconnecting Switch for Type SL transformers rated up to 10 kw, 6.6 to 20 amp primary; 7.5 kw, 5 amp primary.

For loops *not exceeding* 1000 volts (load voltage) 4 to 20 amp.

Surge Voltage By-pass when *Thyrite by-pass* is included.

Open-circuit Shunt, short-circuiting transformer or loop in case of sustained open circuit (as from broken line or burnt-out transformer).

Use on any series constant-current circuit up to 10,000 volts (operating voltage) to ground, up to 20 amperes normal current.

Thyrite by-pass (or film cutout) must be used in all cases.

ADVANTAGES

1. Safety and Convenience to Workmen

- (a) Lines or equipment can be de-energized and short-circuited for night repairs.
- (b) Operated by opening and closing door.

2. Maintains Maximum Service of the Circuit

- (a) Short-circuits connected loop or transformer in event of open circuit.
- (b) When making repairs, only the affected portion of the circuit is out of service.

3. Provides Surge-voltage Protection

The Thyrite by-pass shunts traveling voltage surges across transformer or loop without service interruption or danger to cutout, transformer, or loop.

4. Long Life and Low Maintenance Cost

- (a) Permanent resistance to weather; same construction as Cat. No. 6X242 expulsion-type distribution fuse cutout.
- (b) High dielectric strength.
60-cycle flashover to ground, 55-65 kv dry; 30-40 kv wet.
- (c) "Live" parts of door contacts mounted on noncarbonizing inserts, tips separated by glazed porcelain spacers.
- (d) No exposed or isolated metal parts except hanger; designed to minimize accumulation of static charge.
- (e) Internal metal parts of brass (85 per cent copper) or phosphor-bronze, all nickel plated.
- (f) Self-aligning housing contacts, easy to remove if necessary.

G-E NOVALUX CUTOUT

For Type SL Transformers and Loop Sectionalizing

CONSTRUCTION

HOUSING

Wet-process porcelain, brown glazed finish, with two high-voltage insulators molded integrally with it; interior ribbed to provide long creepage distance between contacts.

DOOR

Molded Textolite with switch-hook ring molded integrally; hinged to housing with two insulating pins.

HOUSING CONTACTS

Two assemblies used, each consisting of two reinforced spring clips with copper-alloy terminal lugs riveted to an insulating block; sprung into place in housing, floating slightly, for self-alignment and easy removal. Spring sections lanced out of clips close circuit through stationary contacts before moving plug breaks contact, to prevent burning. Terminal lugs have blind holes and single set screw giving firm contact without danger of short circuit.

DOOR CONTACTS

Two contact assemblies, each consisting of two heavy spring clips mounted on noncarbonizing inserts in door, with glazed porcelain spacers between tips. Corresponding sides connected by heavy metal strips, with clips attached for holding Thyrite by-pass.

HANGER

Consists of two spring-thread insulator pins, two clamping plates, nuts, and special lock washers. Insulator pins screw into insulators on housing without strain on the porcelain. Clamping plates adjustable for standard sizes of crossarms; hold firmly, will not loosen from vibration.

Optional hanger (Fig. 2) has 3-in. channel instead of clamping plates, for mounting on pole or wall (bolt not supplied).

OTHER FEATURES

Rabbeted joint between door and housing excludes dust and moisture.

"LINE" and "LOAD" wires enter through holes in the housing adequate for No. 2 Awg cable, lining up with terminal lugs. Door is plainly marked to insure proper connections.

OPERATION

See Fig. 7, page 287.

THYRITE BY-PASS

The Thyrite by-pass consists of a Thyrite cylinder with two metal end caps having electrodes which form an enclosed spark gap. Over one gap electrode, a metal cap and helical spring are assembled, fastened in place with solder. (See Fig. 4.)

Although the impedance to normal voltage is so high that leakage is negligible, a surge voltage will either pass readily through the Thyrite material or spark across the internal gap. As soon as the surge passes, normal service is restored. No power flow follows such a surge.

When open-circuit voltage of the constant-current transformer or Type SL transformer is impressed across the Thyrite by-pass, a power flow accompanies the arc-over of the gap, producing heat which melts the solder and releases the cap and spring. These short-circuit the Thyrite by-pass, and the open-circuited loop or Type SL transformer, almost instantly. The time required for this operation is too short to allow a Novalux protector (if used) to operate.

Five Thyrite by-passes are available, each rated for the maximum normal voltage and the minimum open-circuit voltage with which it can be used. The maximum normal voltage is the highest voltage which can be used and still give negligible leakage and assure freedom from accidental short-circuit; and must not be exceeded. It is calculated or measured across the loop or the primary of the Type SL transformer at normal line current. The minimum open-circuit voltage rating is the lowest voltage which can be depended upon to short-circuit the Thyrite by-pass promptly in event of an open-circuited protected load. When protecting a loop of a series circuit, it must be less than the open-circuit voltage of the constant-current transformer. When protecting a Type SL transformer, it must be less than the primary voltage of this transformer when the secondary winding is open-circuited.

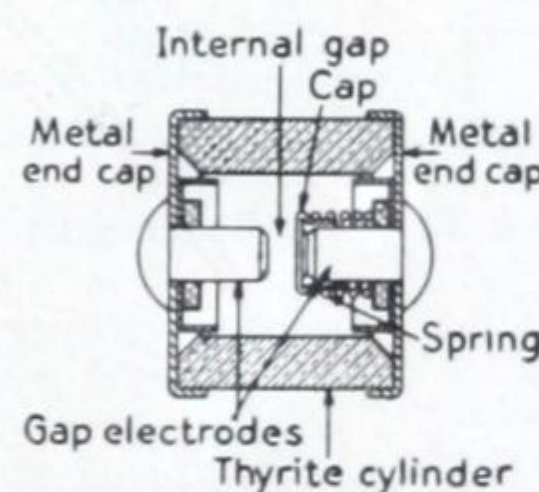


Fig. 4

FILM CUTOUT

A standard film cutout can be used instead of a Thyrite by-pass if desired, but will not provide automatically for continuity of service in the connected loop or Type SL transformer in event of surges. The film cutout may puncture under surge voltage, and must be replaced to restore service of the protected circuit.

The film cutout used should be of at least 25% higher voltage rating than the normal-operating voltage of the connected loop or transformer.

G-E NOVALUX CUTOUT

For Type SL Transformers and Loop Sectionalizing

TABLE I
THYRITE BY-PASSES FOR LOOP PROTECTION

When Normal Voltage across the Loop is Less Than	And Constant-current Transformer O. C. V. Exceeds	Use Thyrite By-pass, Cat. No.
300 volts	600 volts	9F5A7
500	1000	9F5A1
750	1500	9F5A2
1000	2000	9F5A3

TABLE II
THYRITE BY-PASSES FOR TYPE SL TRANSFORMERS

When Normal Voltage Across the Transformer Primary is Less Than	And Primary Voltage with Secondary Open-circuited Exceeds	Use Thyrite By-pass, Cat. No.
300 volts	600 volts	9F5A7
500	1000	9F5A1
750	1500	9F5A2
1000	2000	9F5A3
1500	3000	9F5A4

NOVALUX CUTOUTS ONLY

DESCRIPTION	* CAT. NO.	* LIST PRICE Class GO-51	STD PKG QUANTITY	APPROX WT IN LB	
				Ship. Std Pkg	Net Each
Novalux cutout with crossarm hanger (Fig. 1)	2991604G1	\$23.00	2	27	12
Novalux cutout with channel hanger (Fig. 3)	2991604G2	23.00	2	27	12

* Catalog number and price do not include Thyrite by-pass or film cutout; order these separately.

Extra porcelain spacers for door plugs (two used in each cutout Cat. No. 2991604, Cat. No. 2991604G1, Cat. No. 2991604G2) **\$6.50 per 100, list, Class GO-51.**

Extra clips for Thyrite by-pass (one set used in each cutout) can be installed readily in superseded design Cat. No. 2991604; order Cat. No. 9F5A6, **\$0.30 per set of 2, list, Class GO-51.**

THYRITE BY-PASSES

DESCRIPTION	MAXIMUM NORMAL OPER- ATING VOLTAGE	MINIMUM OPEN CIRCUIT VOLTAGE	CAT. NO.	LIST PRICE Class GO-51	COLOR	APPROX SHIP. WT in Oz
Thyrite By-pass for Novalux cutout	300	600	9F5A7	\$5.50	Yellow	2
	500	1000	9F5A1	5.50	Gray	2
	750	1500	9F5A2	5.50	Blue-black	2
	1000	2000	9F5A3	5.50	Brown	2
	1500	3000	9F5A4	5.50	Bright Red	2

A stock of spare Thyrite by-passes should be kept on hand to insure continuity of service.

FILM CUTOUTS

DESCRIPTION	† PROBABLE VOLTAGE BREAK- DOWN LIMITS	CAT. NO.	LIST PRICE Class GO-51	APPROX SHIP. WT in Lb per 100	STD PKG QUANTITY
Enclosed copper-oxide disk film cutout	50- 90	4815602G2	\$6.50 per 100	1/4	50
	100- 200	4815602G1	6.50 per 100	1/4	50
	250- 350	4815602G3	6.50 per 100	1/4	50
Film cutout	400- 670	3986079G1	3.60 doz	3	12
	650- 920	3986079G2	3.60 doz	3	12
	800-1150	3986079G3	3.60 doz	3	12
		3986079G4	3.60 doz	3	12
	940-1300				
	1460-1640	3986079G5	3.60 doz	3	12
	1640-2000	3986079G6	3.60 doz	3	12
	2140-2570	3986079G7	3.60 doz	3	12
	2680-3320	3986079G8	3.60 doz	3	12

† Rating of film cutout used should exceed normal operating voltage (load voltage) of protected circuit by at least 25 per cent.

† Small quantities of Lynn film cutouts can be ordered from Pittsfield on same requisition with Novalux cutouts. Standard package quantities should be ordered.

A stock of film cutouts should be kept on hand to insure continuity of service.

G-E NOVALUX CUTOUT

For Type SL Transformers and Loop Sectionalizing

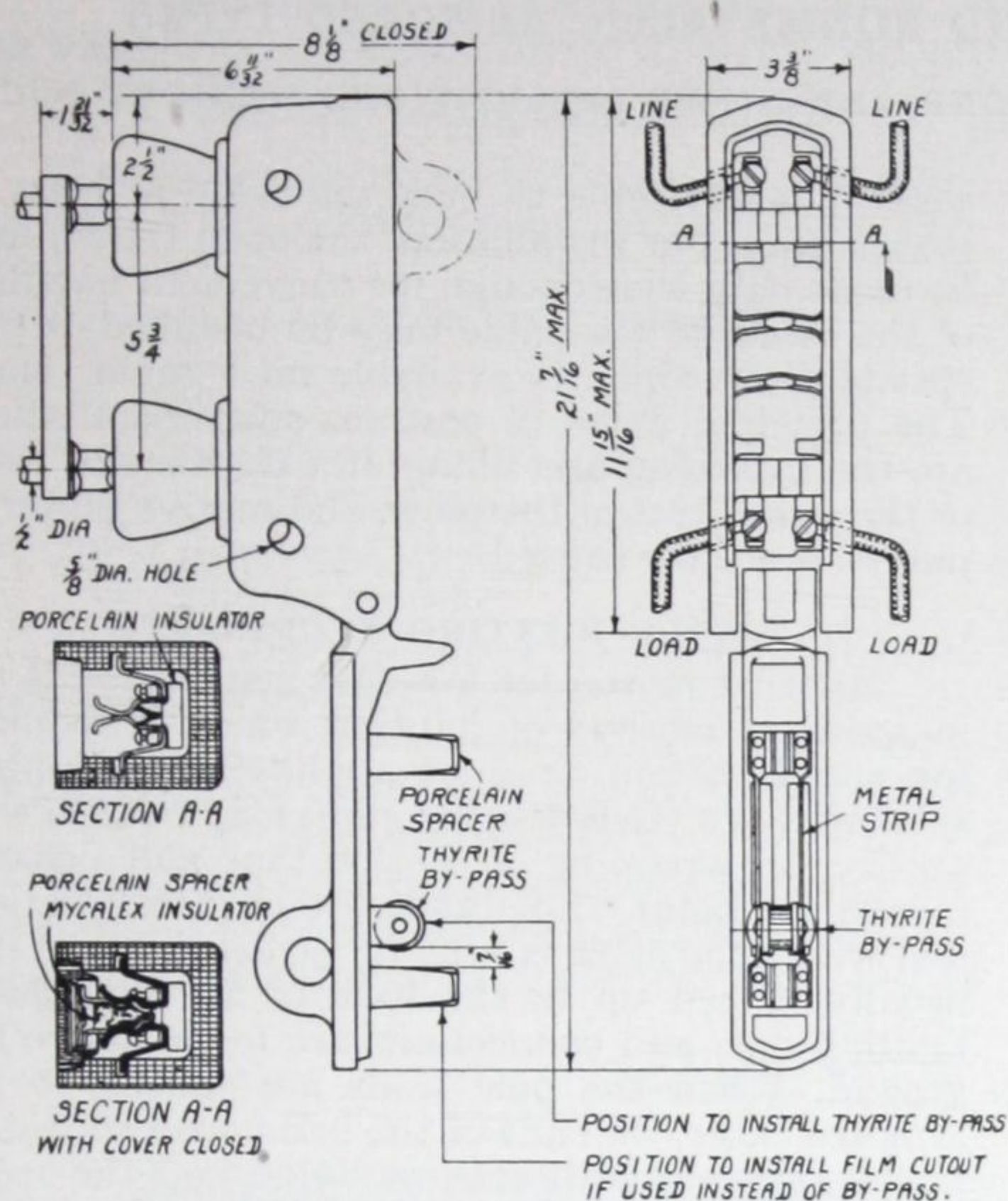


Fig. 5
(K-3928318)
Dimensions

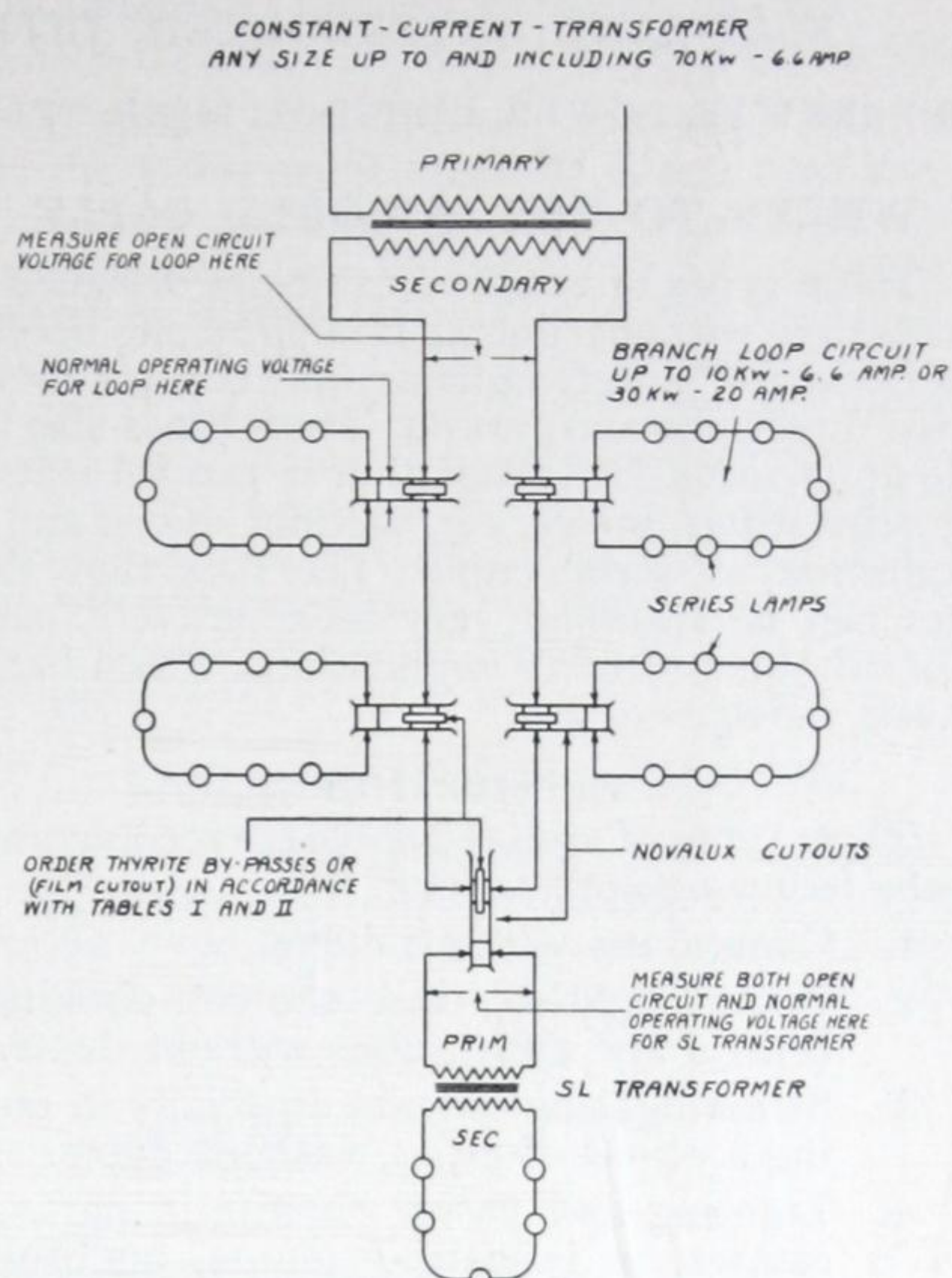
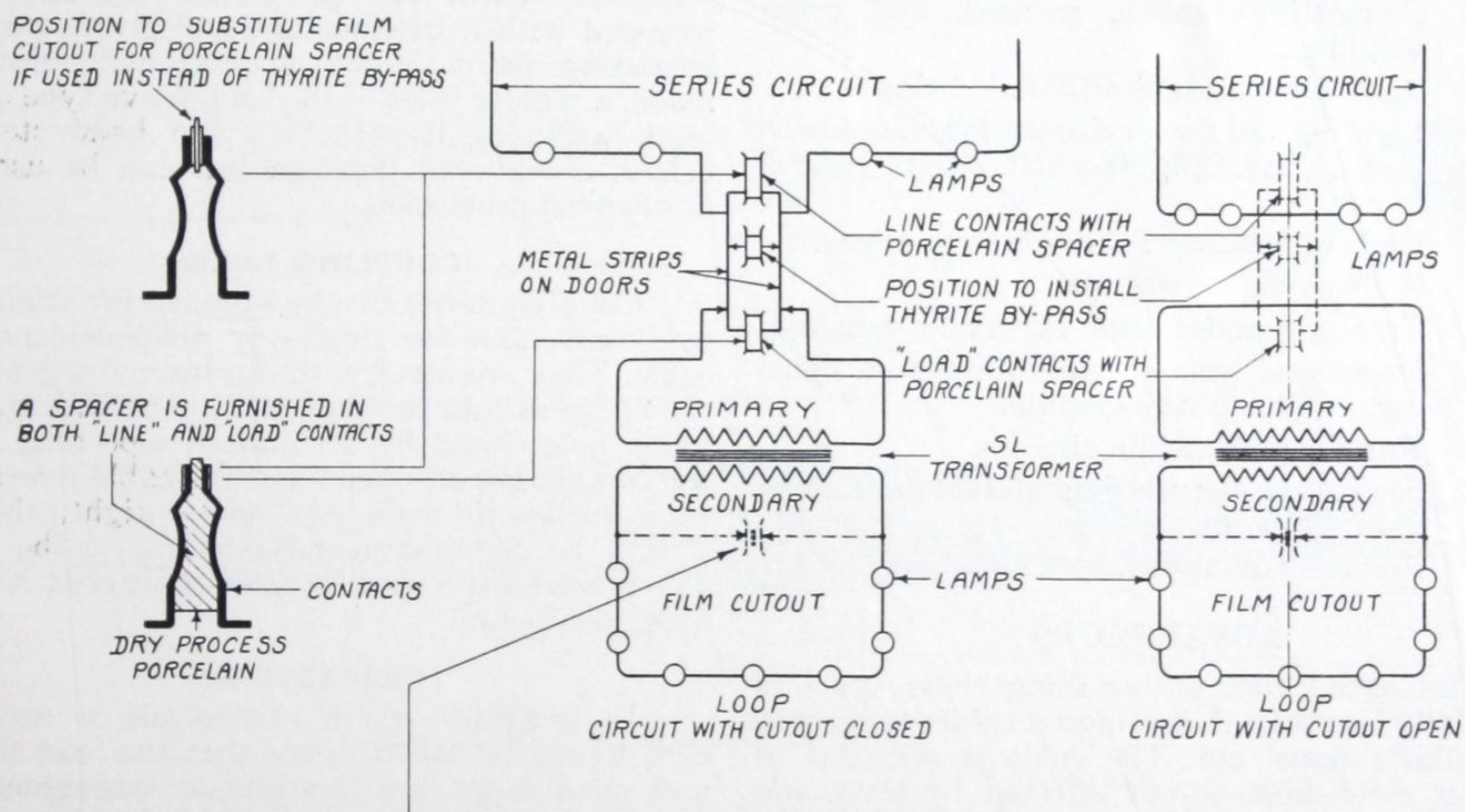


Fig. 6

Typical application of Novalux cutout, Cat. No. 2991604G1 or 2991604G2, on SL transformer or loop circuits



A film cutout protective device would be required here if Thyrite by-pass or film cutout is omitted from primary cutout.

Fig. 7

Typical diagram showing open and closed positions of Novalux cutout, Cat. No. 2991604G1 or 2991604G2

RUBBER AND RUBBER-LIKE INSULATED CABLE

Armored Cable

FLAT-BAND, INTERLOCKED, JUTE, AND NONMETALLIC ARMORED TYPES

FOR PARKWAY, POWER, CONTROL, MINE, TELEPHONE, AND OTHER APPLICATIONS WITHOUT DUCTS

WHERE TO USE ARMORED CABLE

These types of armored cable are designed for installation without ducts, the principal application being for power, lighting, and control circuits buried directly in the ground. These types also find wide application for installation in central stations and substations, mines, etc. without ducts, and for installation as aerial cable. The fact that these types can be installed very inexpensively makes them suitable for many applications, which has led to their widespread use.

APPLICATION

These types of armored cable are recommended for the following applications:

1. General use without ducts.
2. Power, lighting, and control circuits in central and substations without ducts.
3. Street-lighting circuits especially in outlying sections of cities, without ducts.
4. Lighting and power circuits in parks, on estates, in industrial plants, on bridges, etc.
5. Connecting residences to mains, especially subdivisions and underground service in alleys.
6. Connecting houses, garages, and other buildings.
7. Railroad-yard and airport lighting.
8. Lighting and power circuits for amusement parks, baseball, football, and general sports.
9. High-wall power cable for strip mines.
10. Railway-signal circuits.
11. Crossings under small lakes and streams.
12. Horizontal runs in mines for power, lighting, and telephone circuits.
13. Rural electrification circuits.
14. Secondary distribution circuits and secondary networks.
15. Aerial installations.

ADVANTAGES

The initial cost of installing these types is materially less than if unarmored cables were used in conduit, ducts, etc. The cable is resistant to weather conditions, is not affected by frost, and therefore when buried in the ground need not be laid more than 12 to 18 inches under the surface except where traffic is heavy—as for example at street intersections or under roadways. In such

cases it is advisable to bury the cable at least 30 inches deep. For installation, the open trench may be made only wide enough for convenient handling of the cable, or the cable may be installed with a special plow which is available on a rental basis. The principal items of cost for such installations are the trenching and filling, if a plow is not used, or the rental cost of the plow, and motive power to pull it, if a plow is used.

LITTLE JOINTING NECESSARY

Another reason for low-cost installation is the inexpensive method of jointing which is required for aerial station or duct applications. Rubber-splicing tapes (G-E splicing gum) may be used with an over-all wrapping of friction tape and a coat of insulating paint. For underground installations and where the cable is used for street lighting, it is usually looped up in the base of an ornamental lighting pole and connections are made above the ground. When the pole leads are spliced to the armored cable, the ends of the band steel should be bound securely with tape or twine and the splice wrapped with rubber tape (G-E splicing gum). At ordinary temperatures, a slight pressure and the heat of the hand are sufficient to cause the layers of splicing gum to unite in a solid mass, making a watertight joint. The completed joint should be wrapped with a friction tape and given a coat of insulating paint. When underground joints are made, a regular joint of the lead-sleeve type can be used, wrapping it with jute and band steel; or better, a cast-iron junction box can be used for mechanical protection.

COUPLING BOXES

Coupling boxes can be supplied for straight or tee joints, and for single- or multiple-conductor cable. They are fitted with clamps and a groove in the flange or jute packing, and are provided with a filling hole closed by a standard pipe plug. After the conductors are taped and the cable is wrapped with burlap to make the joints tight, the box should be clamped over the armor of the cable. The boxes should then be filled with G-E No. 227 filling compound.

PRECAUTIONS

In localities where electrolysis is expected, care should be taken to see that the lead sheaths and steel tapes are continuous throughout the system. A careful survey should be made to determine the points where the lead sheaths and armor should be connected to the return circuit of the system.

RUBBER AND RUBBER-LIKE INSULATED CABLE

Armored Cable

FLAT-BAND, INTERLOCKED, JUTE, AND NONMETALLIC ARMORED TYPES
FOR PARKWAY, POWER, CONTROL, MINE, TELEPHONE, AND OTHER APPLICATIONS WITHOUT DUCTS

TYPES OF ARMORED CABLE

The foregoing types of cable fall naturally into two broad classifications, metallic and non-metallic.

EXPLANATION OF SYMBOLS

- R Rubber.
- L Lead covering.
- F Double flat-band-steel armor.
- I Interlocking armor.
- J Jute (asphalted) finish.
- G Glyptal sheath.

Detailed descriptions of the various types are given under individual headings.

WHETHER TO USE A METALLIC OR NON-METALLIC TYPE

The nonmetallic types, in most sizes, are lower in price and more economical to install, and in all sizes are more efficient in operation, than any of

the metallic types. The table on page 290, shows that the losses are from 20 to 40 per cent less.

Wherever there is danger of persons coming into contact with the cable—as, for example, in thickly populated sections or where workmen are likely to hit the cable with picks—one of the metallic types is the best to use. The metallic finish serves as a ground and gives adequate protection.

Seldom, however, will installation conditions be such that the metallic types are more desirable than the nonmetallic types. The latter can be used in nearly every location where metallic types were previously used.

UNDERWRITERS' APPROVAL

For 600-volt service in sizes No. 14 to 2,000,000 cir mil Awg, inclusive, all leaded types and non-metallic Type RJ have the approval of the Underwriters' Laboratories for house entrance underground.

Metallic Types of Armored Cable



(Photograph 417718)
Fig. 1

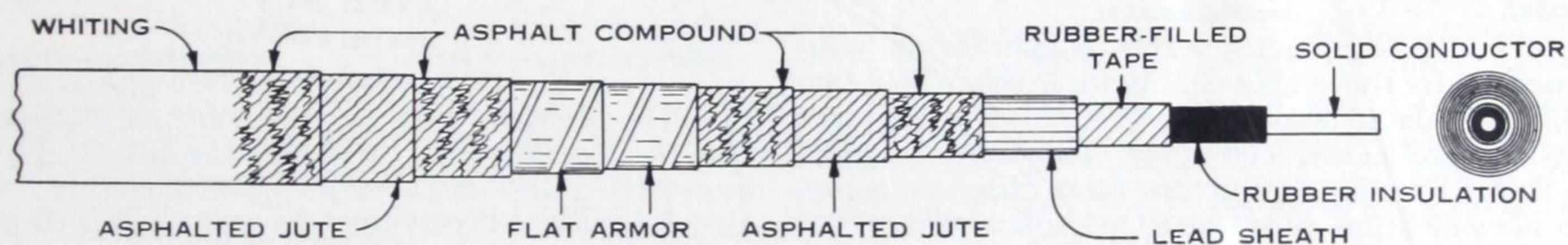


Fig. 2
Type RLJFJ, single-conductor cable



(Photograph 417714)
Fig. 3

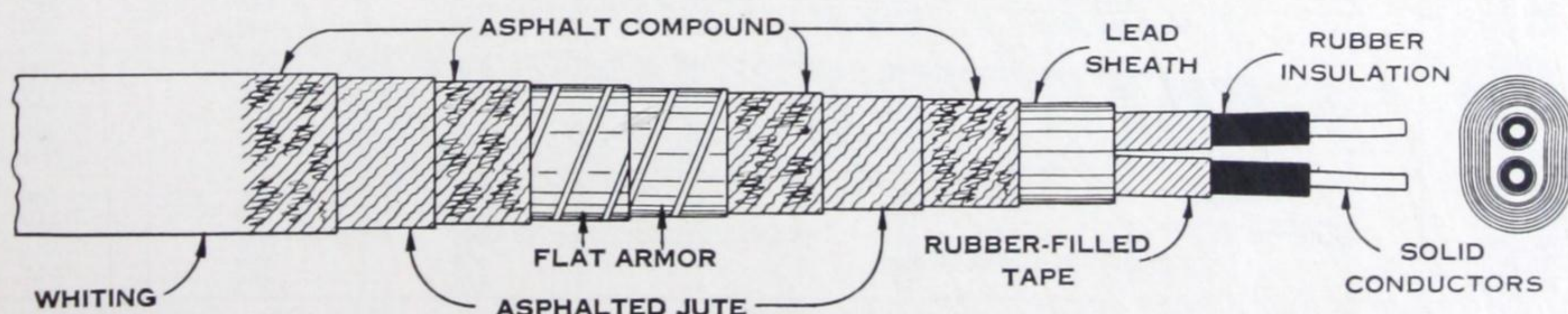


Fig. 4
Type RLJFJ, two-conductor cable

RUBBER AND RUBBER-LIKE INSULATED CABLE

Armored Cable

METALLIC TYPES OF ARMORED CABLE

FOR PARKWAY, POWER, CONTROL, MINE, TELEPHONE, AND OTHER APPLICATIONS WITHOUT DUCTS

TYPE RLJFJ, SINGLE-CONDUCTOR CABLE

SI-58150

(See Fig. 1 and 2)

The conductors are solid or stranded annealed tinned-copper wire conforming to the A.S.T.M. specifications. It is recommended that sizes No. 14 to 6 Awg, inclusive, be solid and that all larger sizes be stranded. On conductors to be insulated for 5000 volts and less, N.E. Code, intermediate, or 30-per-cent rubber is recommended. For over 5000 volts, 30-per-cent or higher grade rubber is recommended.

Over the rubber-insulated conductor there is applied a rubber-filled tape or a weatherproof cotton braid and a lead sheath. The cable is then run through an asphalt bath and covered with a bedding of impregnated jute, each layer of which is run through hot asphalt. Two steel tapes are then applied helically over the jute bedding, with a spacing between adjacent turns of not more than 10 per cent of the width of the tape. The steel tapes are applied in such a manner that the outer tape is approximately centered over the spaces between the turns of the inner tape. A coat of asphalt is placed over the steel tapes, followed by closely wrapped impregnated jute. The jute wrap is saturated with asphalt compound and is applied in a reverse direction to that of the armor. Whiting is applied over the finished cable to prevent sticking of adjacent layers of cable on the reels.

TYPE RLJFJ, TWO-CONDUCTOR, FLAT CABLE

SI-58151

(See Fig. 3 and 4)

The two-conductor cable is similar in construction to the single-conductor cable. The two rubber-insulated and taped or braided conductors are laid parallel and leaded flat. The tapes or braids on the individual conductors have different colors for identification purposes. On cables where the

diameter of the single conductor is greater than 0.714 in., jute laterals are pulled in straight on each side while leading. The finish over the lead is similar to that used on the single-conductor cable.

TYPE RLJFJ, THREE-CONDUCTOR

SI-58152

(See Fig. 5 and 6)

The three-conductor cable is similar in construction to the two-conductor cable except that the conductors are twisted together with jute fillers, giving the cable a circular cross section. Over this a rubber-filled tape is applied; and over the taped core, a lead sheath. The finish over the lead is similar to that of the single-conductor cable.

TYPE RLJIJ

(See Fig. 7 and 8)

Single-conductor—SI-58159 Two-conductor—SI-58160
Three-conductor—SI-58161

The construction of single- and three-conductor Type RLJIJ cable is similar to that of Type RLJFJ cable; and the assembly of the two-conductor Type RLJIJ cable is the same as for a three-conductor Type RLJFJ except, of course, that only two conductors are used. The finish over the lead sheath on this type of cable is similar to the Type RLJFJ except that a single strip of interlocking armor, especially designed, replaces the double wrap of steel tape. The armor can be furnished of plain or galvanized steel or alloys as required.

TYPE RLJ

(See Fig. 9 and 10)

Single-conductor—SI-58153 Two-conductor—SI-58154
Three-conductor—SI-58155

The construction of this cable is similar to that of Type RLJFJ except that the two steel tapes are omitted and one layer of jute over-all is standard. Additional layers may be furnished if desired.

LOSSES (APPROX) IN ARMORED CABLE IN WATTS PER 1000 FEET

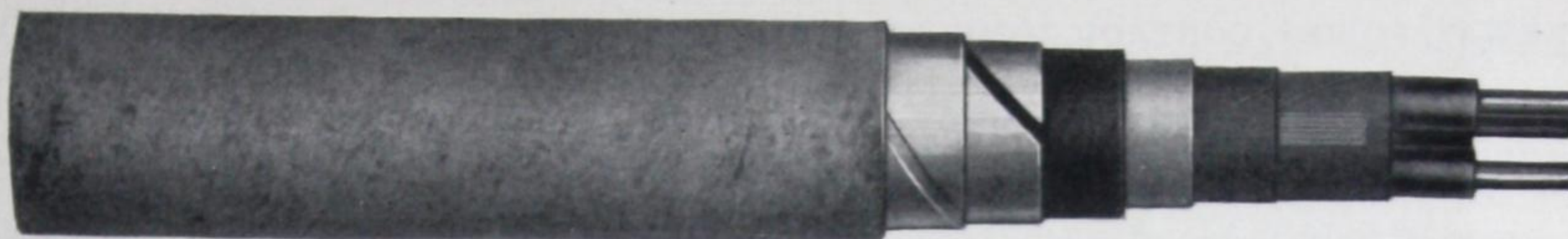
(When used for 6.6- and 20-amp. series circuits)

TYPE	VOLTS	6.6 AMPERES			20 AMPERES		
		CONDUCTOR SIZE AWG					
		No. 8	No. 6	No. 4	No. 8	No. 6	No. 4
RJ	600	28	18	11	255	160	100
RLJ		28	18	11	260	170	110
RLJW		38	27	20	430	330	260
RLJIJ		45	35	27	590	480	410
RLJFJ		50	40	32	610	500	430
RJ	2500	28	18	11	255	160	100
RLJ		28	18	11	260	170	110
RLJW		35	25	19	385	295	215
RLJIJ		42	32	23	510	415	315
RLJFJ		46	36	27	535	430	330
RJ	3500	28	18	11	255	160	100
RLJ		28	18	11	260	170	110
RLJW		35	24	18	380	270	205
RLJIJ		41	29	22	495	370	295
RLJFJ		45	33	26	510	385	304
RJ	5000	28	18	11	255	160	100
RLJ		28	18	11	260	170	110
RLJW		34	24	..	365	265	...
RLJIJ		39	29	..	465	355	...
RLJFI		43	32	..	475	370	...

NOTE.—These figures were estimated from meager test data. They must be regarded, therefore, only as rough approximations.

RUBBER AND RUBBER-LIKE INSULATED CABLE

Metallic Types of Armored Cable



(Photograph 417720)
Fig. 5

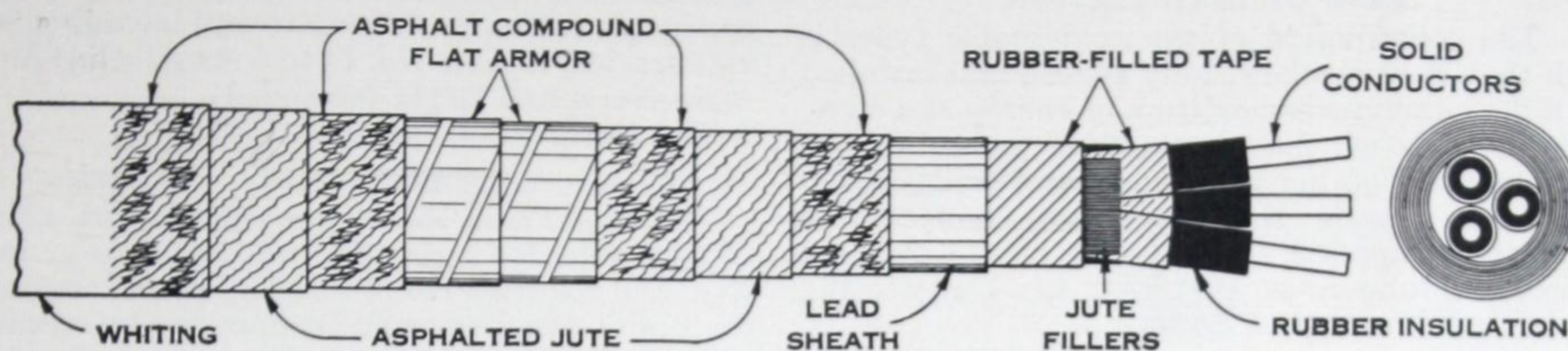


Fig. 6
Type RLJFJ, three-conductor cable



(Photograph 417793)
Fig. 7

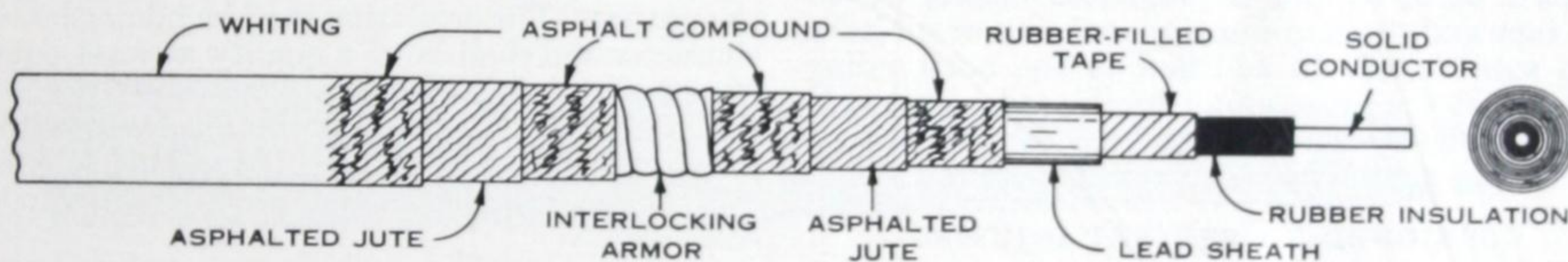


Fig. 8
Type RLJIJ, single-conductor cable with interlocked steel armor



(Photograph 466262)
Fig. 9

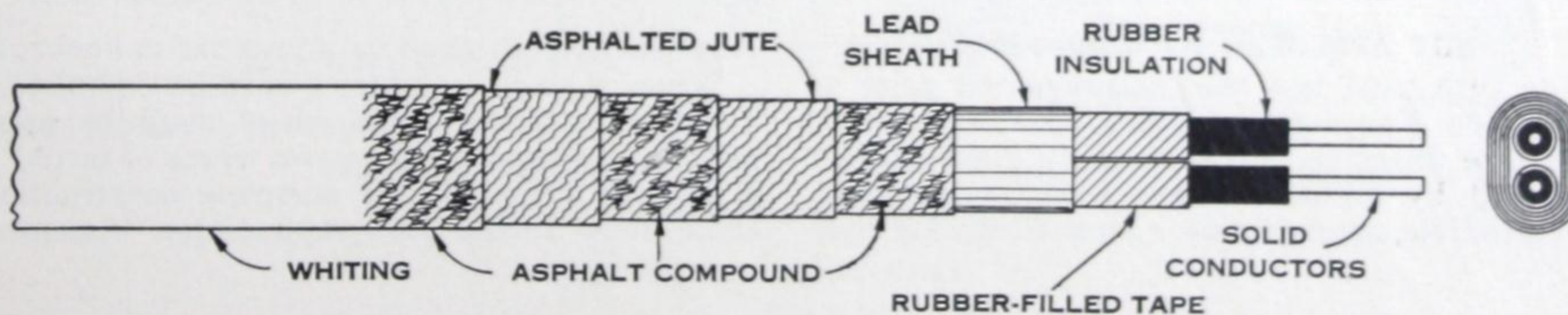


Fig. 10
Type RLJ cable

RUBBER AND RUBBER-LIKE INSULATED CABLE

Armored Cable

NONMETALLIC TYPES OF ARMORED CABLE

FOR PARKWAY, POWER, CONTROL, MINE, TELEPHONE, AND OTHER APPLICATIONS WITHOUT DUCTS

The General Electric Company's many years of successful experience in making insulated cable have enabled its engineers to design new and superior types of nonmetallic armored cable.

ADVANTAGES

EASE OF INSTALLATION

The construction of the nonmetallic types is such that they can be readily spliced and installed with the minimum expenditure of energy and time. This is one of the outstanding advantages of these types. The individual layers of construction can be laid back, the conductors connected, a splicing gum applied, and the cable rebuilt over the splice, resulting in a joint that has the wearing qualities of the original cable.

TYPE RJ

For Burial in the Ground

SI-58012

JUTE-ASPHALT PROVED BY SERVICE

The construction of this type of cable follows the conventional design that has been used for a good many years by practically every manufacturer of armored cable; namely, the use of jute and asphalt. All metal has been eliminated, making the cable finish nonmetallic throughout. In place of the metallic finish previously used, successive wraps of hard, vacuum-impregnated, closely woven jute tape and vacuum-impregnated jute wraps have been substituted. In addition to the outstanding record that the jute-asphalt combination has made in this country for underground service, it has earned the same reputation throughout the world.

CUSHIONED TO PREVENT INJURIES

To take the place of the steel tape which serves as a shock retarder on armored cable with metallic finish, and to protect it against the possible hazard of mechanical injuries, the Type RJ cable has been so constructed that it has a cushioning effect against any hard object with which it may come in contact or that may come in contact with it. This construction is such that its ability to resist the ordinary mechanical injuries to which parkway cable is usually subjected has been proved by its excellent performance in service.

NOT AFFECTED BY CORROSION

The jute used has been impregnated prior to application. The alternate layers, which are applied in reverse direction, are thoroughly filled and are separated by additional layers of weatherproof, noncorrodible, nonoxidizing, element-resisting com-

pound. This results in the entire assembly being unaffected by the corrosive elements usually found in the ground.

DESCRIPTION

Detailed description of General Electric Type RJ nonmetallic cable is given in the form of specifications. They cover single-, two-, and three-conductor cable (for 600- up to and including 5000-volt service) in sizes No. 14 to 6 Awg (solid) and in sizes No. 4 and larger (stranded).

The specifications are as follows.

CONDUCTORS

The conductors shall be made of solid, tinned-copper wire for sizes No. 14 to 6 Awg, inclusive; and for sizes No. 4 and larger, the conductor shall be of stranded tinned copper having stranding as per the United States Bureau of Standards table for standard stranding, unless otherwise specified. The copper and tinning shall conform in all respects to A.S.T.M. specifications for tinned (soft or annealed) copper wire.

RUBBER INSULATION

The rubber insulation shall be applied concentrically to the surface of the tinned-copper conductor and shall adhere sufficiently to prevent its removal from the conductor in an uninjured, unbroken condition in lengths greater than 3 inches except when special methods or appliances are used for the purpose. The insulation shall be homogeneous in character and shall be of a quality at least equal to 30-per-cent A.S.T.M. Class AO rubber compound.

The conductors may also be insulated with 30-per-cent compound to A.S.T.M. Class A, 40-per-cent rubber or other, higher-grade types of special compounds.

TAPE OVER THE RUBBER INSULATION

Directly over the rubber insulation there shall be applied a tape made of closely woven cotton filled with rubber insulating compound and at least 0.010 inch in thickness. The tape shall be applied uniformly and smoothly and shall have a lap of one-fourth to one-third of the width of the tape. The tape shall be black for single-conductor cable; black on one and white on the other for two-conductor; and black on one, white on another, and red on the third for three-conductor cable.

PROTECTIVE COVERING OF INDIVIDUAL CONDUCTORS

When a single conductor is to be completed as a single-conductor cable, there shall be applied over the rubber-filled tape two wraps of tarred jute in reverse direction. For complete construction of cable, refer to the paragraph under "Assembly."

RUBBER AND RUBBER-LIKE INSULATED CABLE

Armored Cable

NONMETALLIC TYPES OF ARMORED CABLE



(Photograph 417755)

Fig. 11

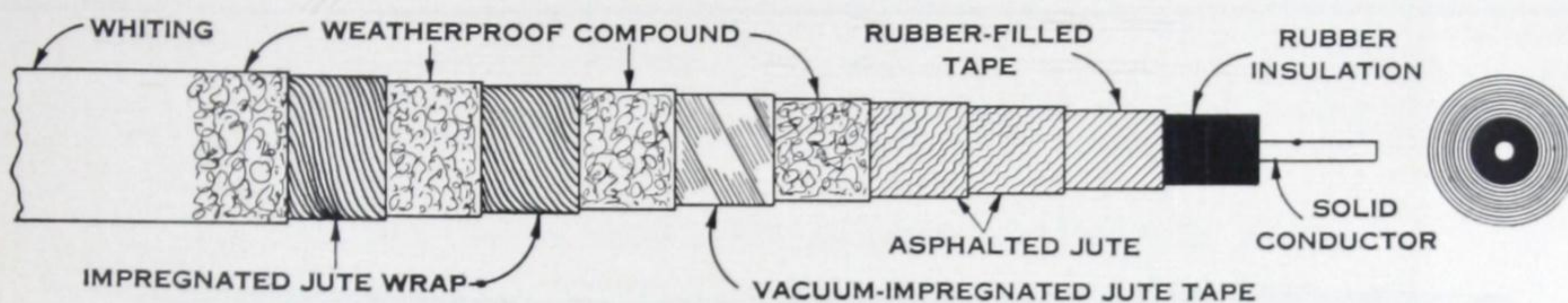


Fig. 12

Type RJ, single-conductor cable



(Photograph 417798)

Fig. 13

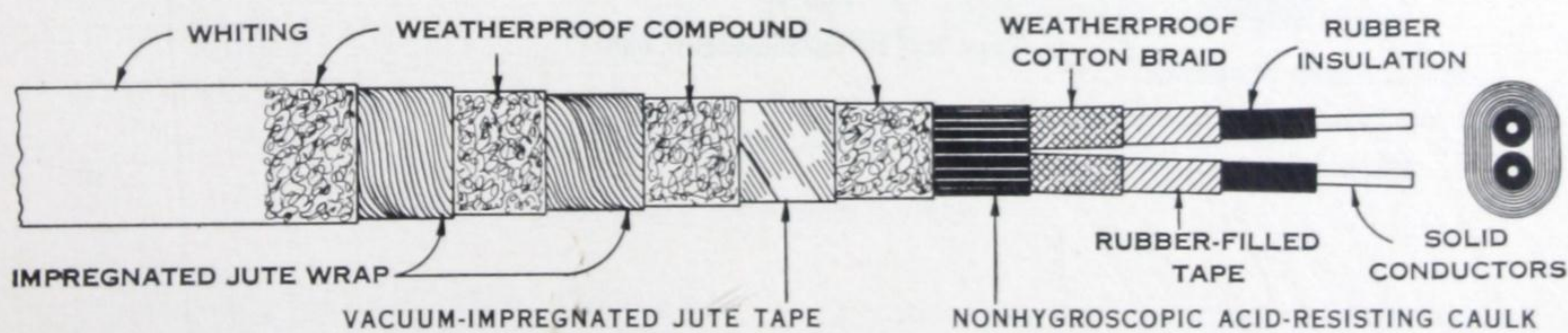


Fig. 14

Type RJ, two-conductor cable

RUBBER AND RUBBER-LIKE INSULATED CABLE

Armored Cable

NONMETALLIC TYPES OF ARMORED CABLE

Single conductors that will be used for multiple-conductor cable shall have applied over the tape a single cotton braid. The protective coverings, in either case, shall be thoroughly impregnated with a moistureproof compound.

ASSEMBLY

On a single-conductor cable, over the two layers of jute there shall be applied a vacuum-impregnated jute tape lapped one-half width, which must be applied so as to be in a reverse

direction to the last layer of jute described in the preceding paragraph. Over this tape there shall be applied a nonhygroscopic, acid-resisting compound. In a reverse direction, there shall then be applied a closed, smooth wrapping of impregnated jute, then a layer of nonhygroscopic, acid-resisting compound. In a reverse direction to the preceding layer there shall be applied a closed, smooth wrapping of impregnated jute covered with a final layer of nonhygroscopic, acid-resisting compound, which shall be treated with whiting.



(Photograph 417766)

Fig. 15

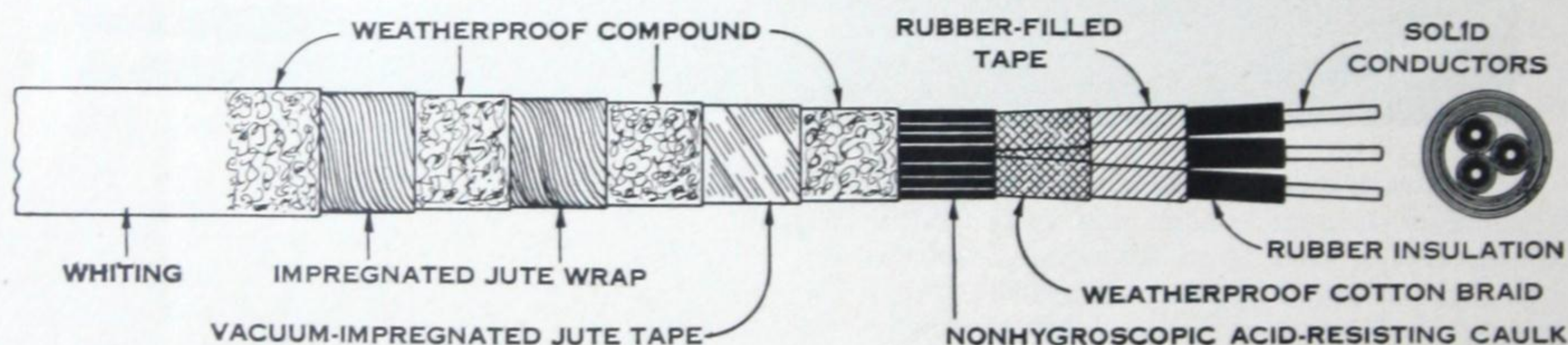


Fig. 16

Type RJ, three-conductor cable

RUBBER AND RUBBER-LIKE INSULATED CABLE

Armored Cable

NONMETALLIC TYPES OF ARMORED CABLE

FOR PARKWAY, POWER, CONTROL, MINE, TELEPHONE, AND OTHER APPLICATIONS WITHOUT DUCT

For two-conductor cable, the two single conductors, which have a protective covering of cotton braid, shall be laid parallel and the interstices filled with a nonhygroscopic, acid-resisting compound. The vacuum-impregnated jute tape and jute, in successive layers, are then applied similarly as outlined for single-conductor cable.

For three-conductor cable, the construction shall be the same as for two-conductor except that the three conductors shall be twisted together. The length of twist on the twisted conductors shall be approximately 15 times the pitch diameter. (The pitch diameter is the diameter over the twisted conductors, minus the diameter of one conductor.)

TYPE RJ WITH ADDITIONAL NONMETALLIC MECHANICAL PROTECTION

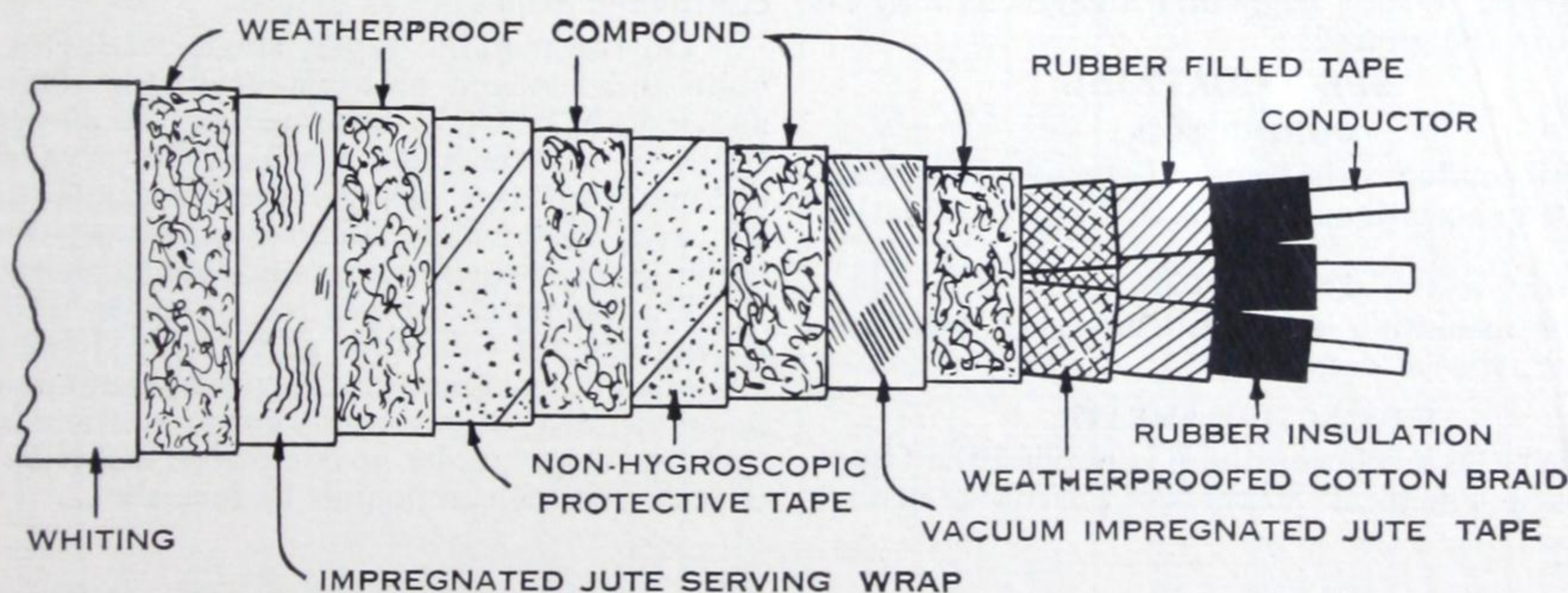
If additional mechanical protection is desired, nonhygroscopic protective tapes, consisting of either fiber or hard rubber can be supplied under the final layer of jute, replacing the inner layer of jute on the Type RJ cable at no additional cost.

This type is especially recommended where the standard Type RJ would not give sufficient mechanical protection to the insulated conductors for applications such as: buried in rocky ground, in mines where the cable is fastened to the ceiling or wall of the mine shaft, especially where it might be struck by the overhead trolley or other objects which might cause a spark, hazardous in mines.

TYPE RJ WITH NONHYGROSCOPIC PROTECTIVE TAPES

APPROXIMATE OVER-ALL DIMENSIONS OF FINISHED CABLE IN INCHES

AWG	600 VOLTS		3000 VOLTS		5000 VOLTS	
	No. of Conductors		No. of Conductors		No. of Conductors	
	Two	Three	Two	Three	Two	Three
14	.91	.94	1.16	1.21	1.38	1.45
12	.94	.98	1.20	1.25	1.41	1.49
10	.99	1.03	1.24	1.30	1.46	1.54
8	1.12	1.17	1.34	1.40	1.52	1.60
6	1.19	1.25	1.47	1.55	1.60	1.68
4	1.32	1.38	1.57	1.65	1.69	1.79
2	1.44	1.51	1.69	1.78	1.81	1.91
1	1.58	1.66	1.77	1.87	1.89	2.00
1/0	1.66	1.75	1.85	1.95	1.98	2.09
2/0	1.75	1.85	1.94	2.05	2.07	2.19
3/0	1.85	1.96	2.04	2.16	2.17	2.30
4/0	1.97	2.08	2.16	2.29	2.32	2.45



TYPE RJB, RJT OR LOOM SHEATH

Where it is desired to use a cable similar to the Type RJ cable buried in the ground or in ducts for secondary distribution, the Type RJ cable can be supplied with a single braid of impregnated jute in place of the outer layer of impregnated jute wrap. The thickness of the jute braid will be slightly

greater than the jute wrap which it replaces, thereby affording better mechanical protection than the standard RJ cable and also increasing the diameter slightly.

If a smoother over-all finish is required, a treated duck tape or loom sheath may be furnished in place of the outer layer of jute.

RUBBER AND RUBBER-LIKE INSULATED CABLE

Armored Cable

NONMETALLIC TYPES OF ARMORED CABLE

FOR PARKWAY, POWER, CONTROL, MINE, TELEPHONE, AND OTHER APPLICATIONS WITHOUT DUCTS

TYPES RR AND RG

APPLICATION

These types are recommended for burial in the ground as parkway cable, for aerial circuits, for installation on bridges where a nonleaded cable is desirable, or for any distribution-circuit applications.

RUBBER, ALL-RUBBER SHEATH—TYPE RR

This type consists of a rubber-insulated cable insulated with a G-E special rubber compound which is extremely moisture-resisting and long-lived. Over this is applied a 60-per-cent all-rubber sheath, which is nonhygroscopic, tough, and abrasion-, acid-, and alkali-resisting.

Cables have been made, consisting of a single layer of rubber compound over the conductor, which acts both as an insulator and sheath. However, research and tests indicate that a good sheath which is both tough and abrasion-resisting, and at the same time is a good insulator, has not been obtained. Therefore, a double-layer cable is offered as being the most satisfactory type.

RUBBER, GLYPTAL SHEATH—TYPE RG

This cable is similar to the all-rubber-sheath type except that a Glyptal sheath is applied overall in place of the all-rubber sheath.

It is a recognized fact that gasoline, oils, acids, and alkalies are the worst enemies of rubber. Since these conditions may be encountered, the General Electric Company has developed a Glyptal sheath which is highly resistant to gasoline and oils and, in addition, to such acids and alkalies as may be present in the ground.

SPECIFICATIONS

CONDUCTOR

The conductor is standard-strand tinned-copper wire in accordance with A.S.T.M. Specification D27.

INSULATION

The insulation is a G-E long-aging, moisture-resisting, special compound.

PROTECTIVE SHEATH

Over the insulation there is applied the Glyptal sheath. The total thickness of the rubber insula-

tion and the Glyptal sheath will be at least equal to I.P.C.E.A. specifications.

Although the tensile strength of Glyptal sheath is not so high as ordinarily obtained in rubber jackets for portable cables, it has enough resistance to mechanical abrasion to enable it to stand the abuse normally received in installation. The Glyptal sheath does not contain rubber in any form; consequently, its characteristics are different. However, if additional mechanical protection is required during installation, a braid can be furnished over the Glyptal sheath.

This braid when furnished is closely woven cotton thoroughly saturated with long-life, flame- and weather-resisting compounds, and then finished with a high-melting-point, flame-resisting material dusted with mica. The thickness of this braid is at least $\frac{1}{32}$ inch. The fact that the braid is treated with weather- and flame-resisting compounds makes an ideal finish for installation conditions, as it will prevent flame from being propagated along the surface of the cable.

HOW TO SELECT THE RIGHT CONSTRUCTION OF BOTH METALLIC AND NON-METALLIC ARMORED CABLE

The minimum conductor size, thickness of insulation, lead, etc., for various voltage ratings should be obtained from the nearest G-E sales office, based on whether the cable is to be used for power circuits or series street-lighting circuits.

The types of insulation for use on these types of armored cables are as follows.

On the metallic types, single-conductor 5000 volts and less and multiple-conductor 3000 volts and less, N.E. Code, intermediate, or 30-per-cent rubber is recommended. On metallic types, single-conductor for over 5000 volts and multiple-conductor over 3000 volts, 30-per-cent, 40-per-cent, or higher-grade, special compounds are recommended.

On nonmetallic types for all single- and multiple-conductor cables for all voltages, 30-per-cent, 40-per-cent, or higher-grade, special compounds are recommended; 30-per-cent rubber is standard for these types and under no conditions will N.E. Code or intermediate compounds be furnished.

RUBBER AND RUBBER-LIKE INSULATED CABLE

Armored Cable

METALLIC AND NONMETALLIC ARMORED TYPES

FOR PARKWAY, POWER, CONTROL, MINE, TELEPHONE, AND OTHER APPLICATIONS WITHOUT DUCTS

No. OF COND.	THICKNESS in 64ths		TYPE RLJFJ				TYPE RLJIJ				TYPE RLJ			TYPE RJ		
	Insula- tion	Lead on L-type Cables Only	THICK- NESS of ARMOR in Inches	OVER- ALL* DIAM in Inches	WEIGHT in Lb per 1000 Ft		THICK- NESS of ARMOR in Inches	OVER- ALL* DIAM in Inches	WEIGHT in Lb per 1000 Ft		OVER- ALL* DIAM in Inches	WEIGHT in Lb per 1000 Ft		OVER- ALL* DIAM in Inches	WEIGHT in Lb per 1000 Ft	
					NET	SHIP.			NET	SHIP.		NET	SHIP.		NET	SHIP.
NO. 14 AWG—SOLID																
2	3	3	.020	.845	569	683	.020	.925	708	850	.630	378	454	.804	210	252
3	3	4	.020	.934	1015	1218	.020	1.014	973	1167	.719	673	808	.837	298	358
NO. 12 AWG—SOLID																
2	3	3	.020	.879	625	750	.020	.959	770	924	.664	422	506	.838	250	300
	7	4	.020	1.160	1150	1380	.020	1.240	1431	1717	.945	837	1004	1.100	422	506
	9	5	.020	1.317	1563	1876	.020	1.397	1945	2334	1.102	1213	1456	1.230	508	610
	10	5	.030	1.439	1860	2232	.020	1.459	2108	2530	1.164	1310	1572	1.296	551	661
3	3	4	.020	.971	1112	1334	.020	1.051	1063	1275	.756	743	892	.873	347	416
	7	5	.020	1.271	1925	2310	.020	1.351	1911	2293	1.056	1411	1693	1.154	655	768
	9	5	.030	1.464	2475	2970	.020	1.484	2273	2727	1.189	1693	2032	1.294	809	971
	10	5	.030	1.533	2712	3254	.020	1.553	2454	2944	1.258	1834	2201	1.364	886	1063
NO. 10 AWG—SOLID																
1	3	3	.020	.670	507	608	.020	.675	475	570	.480	300	360	.680	193	232
	7	3	.020	.795	724	869	.020	.800	690	828	.605	447	536	.825	295	354
	9	3	.020	.857	833	1000	.020	.862	800	960	.667	518	621	.887	343	412
	10	4	.020	.920	1040	1248	.020	.925	1012	1214	.730	703	843	.919	367	440
2	3	4	.020	.952	835	1002	.020	1.032	1033	1241	.737	603	724	.880	280	336
	7	5	.020	1.233	1428	1714	.020	1.313	1765	2118	1.018	1108	1330	1.142	460	552
	9	5	.020	1.359	1673	2008	.020	1.439	2083	2500	1.144	1303	1564	1.272	550	660
	10	5	.030	1.481	1971	2365	.020	1.501	2242	2690	1.206	1400	1680	1.338	595	714
3	3	4	.020	1.014	1226	1471	.020	1.094	1191	1429	.799	841	1009	.918	411	493
	7	5	.020	1.316	2082	2498	.020	1.396	2068	2481	1.101	1538	1846	1.199	729	875
	9	5	.030	1.510	2689	3227	.020	1.530	2422	2906	1.235	1812	2174	1.339	888	1066
	10	5	.030	1.578	2920	3504	.020	1.598	2603	3123	1.303	1953	2344	1.409	967	1160
NO. 8 AWG—SOLID																
1	4	3	.020	.727	610	732	.020	.732	583	699	.537	379	454	.757	254	305
	7	3	.020	.821	780	936	.020	.826	750	900	.631	490	588	.851	329	395
	9	4	.020	.914	1045	1254	.020	.919	1008	1209	.724	710	852	.913	379	455
	10	4	.020	.946	1118	1342	.020	.951	1083	1299	.756	764	916	.945	404	485
2	4	4	.020	1.066	1053	1264	.020	1.146	1295	1554	.851	768	922	.998	384	461
	7	5	.020	1.276	1550	1860	.020	1.356	1915	2298	1.061	1210	1452	1.194	525	630
	9	5	.030	1.469	1971	2365	.020	1.489	2242	2690	1.194	1410	1692	1.324	619	743
	10	5	.030	1.533	2120	2544	.020	1.553	2405	2886	1.258	1510	1812	1.390	666	799
3	4	4	.020	1.138	1542	1850	.020	1.218	1508	1809	.923	1088	1306	1.044	583	700
	7	5	.020	1.372	2273	2728	.020	1.452	2268	2721	1.157	1708	2050	1.255	833	1000
	9	5	.030	1.565	2898	3478	.020	1.585	2628	3153	1.290	1988	2386	1.395	1000	1200
	10	5	.030	1.634	3132	3758	.020	1.654	2906	3487	1.359	2126	2551	1.465	1083	1300
NO. 6 AWG—SOLID																
1	4	3	.020	.761	696	835	.020	.766	666	799	.571	438	525	.792	302	362
	8	4	.020	.917	1072	1286	.020	.922	1033	1239	.727	742	890	.917	406	487
	9	4	.020	.948	1146	1375	.020	.953	1112	1334	.758	797	956	.948	432	518
	10	4	.020	.980	1220	1464	.020	1.035	1181	1417	.790	853	1023	.980	458	550
2	4	4	.020	1.134	1193	1432	.020	1.214	1495	1794	.919	902	1082	1.064	465	558
	8	5	.030	1.475	2035	2442	.020	1.495	2318	2782	1.200	1462	1754	1.328	669	803
	9	5	.030	1.538	2182	2618	.020	1.557	2480	2976	1.262	1565	1878	1.392	720	864
	10	5	.030	1.601	2330	2796	.020	1.621	2642	3170	1.326	1667	2000	1.458	771	925
3	4	5	.020	1.243	2015	2418	.020	1.323	1977	2372	1.028	1497	1796	1.186	711	853
	8	5	.030	1.571	2991	3589	.020	1.591	2708	3249	1.296	2068	2482	1.398	1072	1286
	9	5	.030	1.638	3212	3854	.020	1.658	2894	3472	1.363	2212	2654	1.486	1162	1394
	10	6	.030	1.738	3745	4494	.025	1.828	3580	4296	1.463	2700	3240	1.539	1253	1504

* All two-conductor cables listed are made up flat. Diameters listed for such cables are major diameters.

RUBBER AND RUBBER-LIKE INSULATED CABLE

Armored Cable

METALLIC AND NONMETALLIC ARMORED TYPES

FOR PARKWAY, POWER, CONTROL, MINE, TELEPHONE, AND OTHER APPLICATIONS WITHOUT DUCTS

No. OF COND.	THICKNESS in 64ths		TYPE RLJFJ				TYPE RLJIJ				TYPE RLJ			TYPE RJ		
	Insula- tion	Lead on L-type Cables Only	THICK- NESS of ARMOR in Inches	OVER- ALL* DIAM in Inches	WEIGHT in Lb per 1000 Ft		THICK- NESS of ARMOR in Inches	OVER- ALL* DIAM in Inches	WEIGHT in Lb per 1000 Ft		OVER- ALL* DIAM in Inches	WEIGHT in Lb per 1000 Ft		OVER- ALL* DIAM in Inches	WEIGHT in Lb per 1000 Ft	
					NET	SHIP.			NET	SHIP.		NET	SHIP.		NET	SHIP.
NO. 4 AWG—SOLID																
1	4	3	.020	.801	815	978	.020	.806	780	936	.611	517	619	.834	371	445
	8	4	.020	.957	1208	1450	.020	1.012	1165	1398	.767	840	1008	.959	479	575
	9	4	.020	.988	1282	1538	.020	1.043	1290	1548	.798	893	1071	.990	506	607
	10	4	.020	1.019	1355	1626	.020	1.074	1315	1578	.829	950	1140	1.022	533	640
2	4	5	.020	1.247	1543	1852	.020	1.327	1929	2315	1.032	1240	1488	1.148	597	716
	8	5	.030	1.553	2280	2736	.020	1.573	2583	3099	1.278	1653	1984	1.412	813	976
	9	5	.030	1.615	2426	2911	.020	1.635	2748	3297	1.340	1757	2108	1.476	867	1040
	10	6	.030	1.708	2837	3404	.025	1.798	3400	4080	1.433	2152	2582	1.542	921	1105
3	4	5	.020	1.328	2335	2802	.020	1.408	2292	2750	1.113	1752	2102	1.206	931	1117
	8	6	.030	1.689	3660	4392	.025	1.779	3513	4215	1.414	2663	3196	1.488	1310	1572
	9	6	.030	1.755	3900	4680	.025	1.845	3732	4478	1.480	2842	3410	1.559	1405	1686
	10	6	.030	1.824	4140	4968	.025	1.914	3953	4744	1.544	3023	3628	1.629	1500	1800
NO. 8 AWG—STRANDED																
2	4	4	.020	1.102	1100	1320	.020	1.182	1375	1650	.887	817	980	1.038	409	491
3	4	4	.020	1.177	1633	1960	.020	1.257	1615	1938	.962	1157	1488	1.088	626	751
NO. 6 AWG—STRANDED																
1	4	3	.020	.783	737	884	.020	.788	715	858	.593	467	560	.813	317	380
	8	4	.020	.939	1131	1357	.020	.944	1093	1311	.749	782	938	.938	425	510
	9	4	.020	.970	1205	1446	.020	1.025	1168	1401	.780	841	1009	.969	452	542
	10	4	.020	1.001	1278	1554	.020	1.056	1240	1488	.811	890	1068	1.001	479	575
2	4	4	.020	1.178	1276	1531	.020	1.258	1580	1896	.963	967	1160	1.106	491	589
	8	5	.030	1.519	2144	2573	.020	1.539	2422	2906	1.244	1540	1848	1.370	699	839
	9	5	.030	1.581	2286	2743	.020	1.601	2596	3115	1.306	1643	1972	1.434	751	901
	10	6	.030	1.674	2708	3250	.025	1.764	3223	3868	1.399	2028	2434	1.500	803	964
3	4	5	.020	1.290	2127	2552	.020	1.370	2103	2524	1.075	1593	1912	1.161	757	908
	8	5	.030	1.619	3171	3805	.020	1.639	2846	3415	1.344	2176	2611	1.443	1129	1355
	9	6	.030	1.716	3700	4440	.025	1.806	3517	4220	1.441	2652	3182	1.513	1222	1466
	10	6	.030	1.784	3935	4722	.025	1.874	3736	4483	1.509	2831	3397	1.584	1315	1578
NO. 4 AWG—STRANDED																
1	4	3	.020	.831	863	1036	.020	.836	830	996	.641	565	678	.862	389	467
	8	4	.020	.987	1277	1532	.020	1.042	1245	1494	.797	901	1081	.987	503	604
	9	4	.020	1.028	1352	1622	.020	1.073	1320	1584	.828	958	1149	1.018	532	638
	10	4	.020	1.050	1425	1710	.020	1.105	1395	1674	.860	1012	1214	1.050	560	672
2	4	5	.020	1.307	1718	2062	.020	1.387	2067	2480	1.092	1360	1632	1.206	634	761
	8	5	.030	1.615	2437	2924	.020	1.635	2707	3248	1.340	1775	2130	1.468	856	1027
	9	6	.030	1.708	2855	3426	.025	1.798	3340	4008	1.433	2158	2590	1.523	912	1094
	10	6	.030	1.772	3018	3622	.025	1.862	3536	4243	1.497	2285	2742	1.598	967	1160
3	4	5	.030	1.463	2800	3360	.020	1.473	2503	3004	1.178	1923	2308	1.269	991	1189
	8	6	.030	1.754	3950	4740	.025	1.844	3759	4511	1.479	2869	3443	1.550	1388	1666
	9	6	.030	1.820	4180	5016	.025	1.910	3982	4778	1.545	3052	3662	1.620	1487	1784
	10	6	.030	1.889	4410	5292	.025	1.979	4201	5041	1.614	3231	3877	1.690	1587	1904

* All two-conductor cables listed are made up flat. Diameters listed for such cables are major diameters.

The above table covers rubber-insulated armored cable in the sizes and voltage ratings most generally used. Metallic types can be furnished for higher voltages, and all types with any size of conductor. Detailed information will be supplied on request.

RUBBER-INSULATED CABLE

Bracket-lead Cable with Manufactured Fork and Terminal

Street-lighting brackets are wired—either internally or externally as desired—generally with a two-conductor insulated cable. In order to adapt this type of cable for connection to the lighting units, it is necessary to separate the two conductors, making a fork at the split, and to prepare the ends of the conductors for insertion in the binding posts of the lighting unit. The construction of this fork by workmen in the field always takes time, and the results are not always satisfactory.

The wiring assembly offered by General Electric presents a neat and finished appearance, and eliminates the slow and expensive hand labor now necessary. The savings resulting from its use are considerable.

DESCRIPTION

The over-all jacket of the bracket end of a length of bracket-lead cable is stripped back approximately 14 inches. A rubber strain-relief fork is molded on the cable at this point. Also, the rubber insulation is stripped back from the end of the individual conductors for a distance of one inch, and the bare copper ends are soldered. This results in a compact terminal for insertion into the binding posts of the lighting fixture.

The complete assembly, with the molded fork and terminals, is available in lengths of 17, 20, and 25 feet; in sizes No. 10 Awg stranded to No. 4 Awg stranded, inclusive; and for voltages of 2500, 3500, 5000, and 7500 to ground.

ADVANTAGES

The use of this assembly:

1. Eliminates the slow and expensive hand stripping and taping of conductors on the job.

2. Avoids wastage of cable, in that the assembly is furnished cut to the length required.
3. Provides very necessary mechanical- and electrical-strain relief.
4. Makes waterproof and permanent joint at the fork of the cable.
5. Gives a neat, uniform bracket-wiring job.

VOLTS	CATALOG NUMBER		
	17 Ft Long	20 Ft Long	25 Ft Long
SIZE NO. 10 AWG STRANDED			
2500	1GC6F25	1GC6F29	1GC6F33
3500	1GC6F26	1GC6F30	1GC6F34
5000	1GC6F27	1GC6F31	1GC6F35
7500	1GC6F28	1GC6F32	1GC6F36
SIZE NO. 8 AWG STRANDED			
2500	1GC6F1	1GC6F5	1GC6F9
3500	1GC6F2	1GC6F6	1GC6F10
5000	1GC6F3	1GC6F7	1GC6F11
7500	1GC6F4	1GC6F8	1GC6F12
SIZE NO. 6 AWG STRANDED			
2500	1GC6F13	1GC6F17	1GC6F21
3500	1GC6F14	1GC6F18	1GC6F22
5000	1GC6F15	1GC6F19	1GC6F23
7500	1GC6F16	1GC6F20	1GC6F24
SIZE NO. 4 AWG STRANDED			
2500	1GC6F37	1GC6F41	1GC6F45
3500	1GC6F38	1GC6F42	1GC6F46
5000	1GC6F39	1GC6F43	1GC6F47
7500	1GC6F40	1GC6F44	1GC6F48

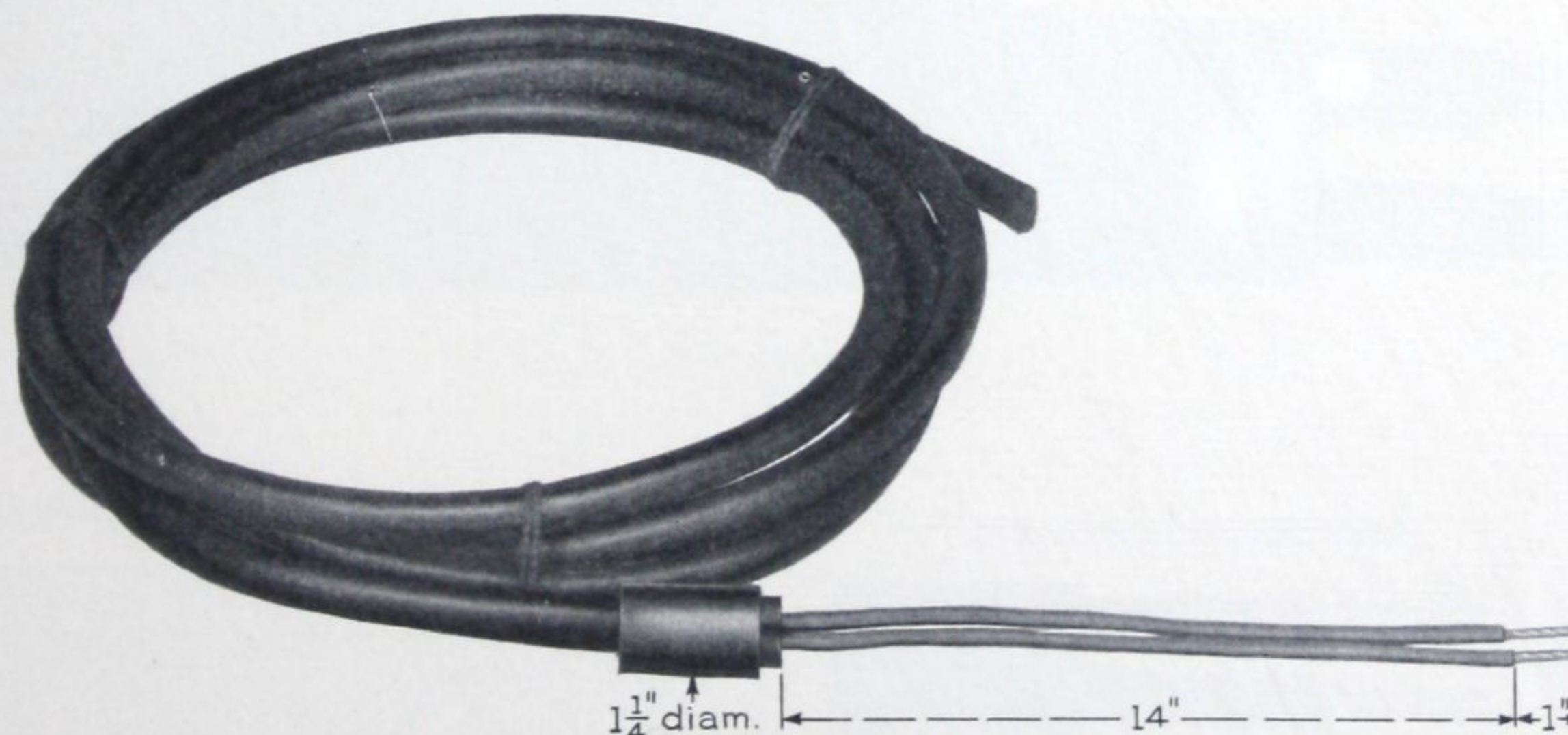


Fig 23

(Photograph 418217)

Ornamental-pole and bracket-lead street-lighting cable
with manufactured fork and terminal

RUBBER-INSULATED CABLE

Bracket-lead Cable with Manufactured Fork and Terminal Prices

Volts	CAT. NO.			LIST PRICE EACH F.O.B. BRIDGEPORT		
	17 Ft Long	20 Ft Long	25 Ft Long	17 Ft Long	20 Ft Long	25 Ft Long
SIZE NO. 10 AWG STRANDED						
2500	1GC6F25	1GC6F29	1GC6F33	\$2.80	\$2.90	\$3.20
3500	1GC6F26	1GC6F30	1GC6F34	2.90	3.00	3.30
5000	1GC6F27	1GC6F31	1GC6F35	3.00	3.10	3.40
7500	1GC6F28	1GC6F32	1GC6F36	3.10	3.20	3.50
SIZE NO. 8 AWG STRANDED						
2500	1GC6F1	1GC6F5	1GC6F9	\$2.90	\$3.10	\$3.30
3500	1GC6F2	1GC6F6	1GC6F10	3.00	3.20	3.50
5000	1GC6F3	1GC6F7	1GC6F11	3.10	3.30	3.60
7500	1GC6F4	1GC6F8	1GC6F12	3.30	3.50	3.80
SIZE NO. 6 AWG STRANDED						
2500	1GC6F13	1GC6F17	1GC6F21	\$3.40	\$3.70	\$4.20
3500	1GC6F14	1GC6F18	1GC6F22	3.50	3.80	4.40
5000	1GC6F15	1GC6F19	1GC6F23	3.60	4.00	4.60
7500	1GC6F16	1GC6F20	1GC6F24	3.80	4.20	4.80
SIZE NO. 4 AWG STRANDED						
2500	1GC6F37	1GC6F41	1GC6F45	\$3.70	\$4.10	\$4.50
3500	1GC6F38	1GC6F42	1GC6F46	3.80	4.20	4.60
5000	1GC6F39	1GC6F43	1GC6F47	3.90	4.30	4.80
7500	1GC6F40	1GC6F44	1GC6F48	4.10	4.40	5.00

Prices are based on an order for lots of 50 and over. For prices on lots of less than 50, refer to the Cable Section, Schenectady.

Terms: $\frac{1}{2}$ of 1 per cent cash discount in 10 days, net 30 days from date of invoice.

None carried in stock.

RUBBER-INSULATED CABLE

Ornamental-pole and Bracket Cable for Street Lighting

For 600-volt Service between Conductors, and 2500-, 3500-, 5000-, and 7500-volt Service between Conductors and Ground

APPLICATION

This type of cable is recommended for wiring between the pole base and the lighting fixture inside an ornamental pole, and between the overhead circuit and the lighting fixture on a street-lighting bracket; for internal or external wiring; or for any other application requiring a two-conductor, flexible cable insulated for 600 volts and less between conductors and for higher voltages used in series street lighting between the conductor and ground.

CONDUCTORS

The conductors are extra-flexible, stranded, of No. 24 Awg, tinned, annealed copper wires in number sufficient to obtain the proper cross-sectional area.

INSULATION

The standard insulation is 30-per-cent performance-test rubber. However, 30-per-cent rubber to A.S.T.M. specifications, or other compounds, can be supplied.

A wall of rubber of sufficient thickness to withstand 600 volts between conductors is applied over

each conductor. The two insulated conductors are then laid parallel and covered with sufficient of the same insulation to withstand the specified voltages to ground. Over this jacket there are applied a rubber-filled tape and a single cotton braid impregnated with weatherproof compound.

ORNAMENTAL-POLE AND BRACKET CABLE

Standard Insulation—30-per-cent A.S.T.M., Class AO (30-per-cent performance-test) Rubber

(S.I. 58132)

VOLTS to GROUND	CONDUCTOR SIZE Awg	STRANDING	THICKNESS in Inches of BELT INSULATION	DIAMETER in Inches OVER-ALL	WEIGHT in Lb per 1000 Ft	
					NET	SHIPPING
2500	10	27/24	.047	.63	270	324
2500	8	37/24	.047	.66	314	377
2500	6	61/24	.047	.80	482	579
2500	4	91/24	.047	.88	621	746
3500	10	27/24	.078	.69	316	380
3500	8	37/24	.078	.72	363	436
3500	6	61/24	.078	.86	540	648
3500	4	91/24	.078	.94	686	824
5000	10	27/24	.109	.75	368	442
*5000	8	37/24	.109	.78	420	504
5000	6	61/24	.109	.92	611	734
5000	4	91/24	.109	1.00	757	909
7500	10	27/24	.156	.84	456	548
7500	8	37/24	.156	.88	515	618
7500	6	61/24	.156	1.02	717	861
7500	4	91/24	.156	1.10	876	1052



(Photograph 418185)
Fig. 1

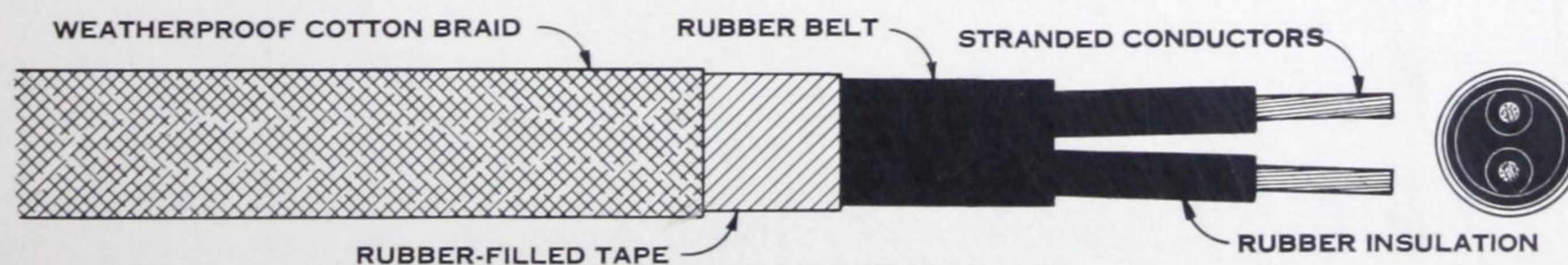


Fig. 2

Ornamental-pole and bracket cable

RUBBER-INSULATED CABLE PRICES

Ornamental-pole and Bracket Cable Prices

STANDARD INSULATION—30-PER-CENT PERFORMANCE-TEST RUBBER

(S.I. 58132)

2500, 3500, 5000, 7500, 10,000 Volts

CONDUCTOR SIZE AWG	VOLTAGE TO GROUND	LIST PRICE PER 1000 FT							
		200 to 499 Ft	500 to 999 Ft	1000 to 4999 Ft	5000 to 9999 Ft	10,000 to 24,999 Ft	25,000 to 49,999 Ft	50,000 to 99,999 Ft	100,000 Ft and Over
10(27/24)	2500	\$109.00	\$94.60	\$88.30	\$85.50	\$82.80	\$81.00	\$78.30	\$76.40
	3500	119.00	103.00	96.00	93.10	90.10	88.10	85.10	83.20
	5000	126.00	109.00	102.00	98.70	95.60	93.50	90.30	88.20
	7500	137.00	119.00	111.00	107.00	104.00	101.00	98.00	95.80
	10000	148.00	128.00	119.00	116.00	112.00	109.00	106.00	103.00
8(37/24)	2500	137.00	119.00	111.00	107.00	104.00	101.00	98.00	95.80
	3500	146.00	127.00	118.00	115.00	111.00	109.00	105.00	102.00
	5000	158.00	137.00	128.00	124.00	120.00	117.00	114.00	111.00
	7500	180.00	156.00	146.00	141.00	137.00	134.00	129.00	126.00
	10000	202.00	175.00	163.00	158.00	153.00	150.00	144.00	141.00
6(61/24)	2500	188.00	163.00	152.00	148.00	143.00	140.00	135.00	132.00
	3500	206.00	179.00	167.00	162.00	157.00	153.00	148.00	144.00
	5000	218.00	189.00	177.00	171.00	166.00	162.00	157.00	153.00
	7500	283.00	245.00	229.00	222.00	215.00	210.00	203.00	198.00
	10000	317.00	275.00	256.00	248.00	240.00	235.00	227.00	222.00
4(91/24)	2500	246.00	213.00	199.00	193.00	187.00	182.00	176.00	172.00
	3500	259.00	225.00	210.00	203.00	197.00	192.00	186.00	181.00
	5000	274.00	237.00	221.00	214.00	207.00	203.00	196.00	191.00
	7500	300.00	260.00	243.00	235.00	228.00	223.00	215.00	210.00
	10000	343.00	297.00	277.00	269.00	260.00	255.00	246.00	240.00

ALL LIST PRICES ARE PER 1000 FT.

For shipments of less than 100 lb:

To any point, LIST PRICES are f.o.b. shipping point, no freight allowance.

For shipments of 100 lb and over:

To any point in the U.S.A. and to the Panama Canal Zone or Hawaiian Islands, LIST PRICES are f.o.b. delivery point, and including return freight on the empty reels. Prices must not be quoted f.o.b. factory.

Sizes **cannot** be combined to apply length discounts.

When quoting, follow Selling Instructions under Methods, Terms, and Conditions of Sale.

Terms of payment—Net cash 30 days from date of invoice, 1/2 of 1% cash discount for payment 10 days from date of invoice.

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Bangor, Me.....	600 Main Street	New Haven, Conn.....	129 Church Street
Binghamton, N. Y.....	19 Chenango Street	New Orleans, La.....	837 Gravier Street
Birmingham, Ala.....	600 North Eighteenth Street	New York, N. Y.....	570 Lexington Avenue
Boston, Mass.....	140 Federal Street	Niagara Falls, N. Y.....	201 Falls Street
Buffalo, N. Y.....	1 West Genesee Street	Oklahoma City, Okla.....	119 North Robinson Street
Butte, Mont.....	20 West Granite Street	Omaha, Nebr.....	409 South Seventeenth Street
Cedar Rapids, Iowa.....	203 Second Street, Southeast	Philadelphia, Pa.....	1405 Locust Street
Charleston, W. Va.....	304 Capitol Street	Phoenix, Ariz.....	441 West Madison Street
Charlotte, N. C.....	200 South Tryon Street	Pine Bluff, Ark.....	501 Main Street
Chicago, Ill.....	230 South Clark Street	Pittsburgh, Pa.....	436 Seventh Avenue
Cincinnati, Ohio.....	215 West Third Street	Portland, Me.....	25 Bedford Street
Cleveland, Ohio.....	4966 Woodland Avenue	Portland, Ore.....	621 Southwest Alder Street
Columbus, Ohio.....	40 South Third Street	Providence, R. I.....	56 Pine Street
Dallas, Texas.....	1801 North Lamar Street	Richmond, Va.....	700 East Franklin Street
Davenport, Iowa.....	511 Pershing Avenue	Roanoke, Va.....	202 South Jefferson Street
Dayton, Ohio.....	25 North Main Street	Rochester, N. Y.....	89 East Avenue
Denver, Colo.....	650 Seventeenth Street	St. Louis, Mo.....	112 North Fourth Street
Des Moines, Iowa.....	418 West Sixth Avenue	Salt Lake City, Utah.....	200 South Main Street
Detroit, Mich.....	700 Antoinette Street	San Antonio, Texas.....	201 Villita Street
Duluth, Minn.....	14 West Superior Street	San Francisco, Calif.....	235 Montgomery Street
El Paso, Texas.....	109 North Oregon Street	Schenectady, N. Y.....	1 River Road
Erie, Pa.....	10 East Twelfth Street	Seattle, Wash.....	821 Second Avenue
Fort Wayne, Ind.....	1635 Broadway	Spokane, Wash.....	421 Riverside Avenue
Fort Worth, Texas.....	408 West Seventh Street	Springfield, Ill.....	607 East Adams Street
Grand Rapids, Mich.....	148 Monroe Avenue, Northwest	Springfield, Mass.....	95 State Street
Hartford, Conn.....	338 Ann Street	Syracuse, N. Y.....	113 South Salina Street
Houston, Texas.....	1016 Walker Avenue	Tacoma, Wash.....	1019 Pacific Avenue
Indianapolis, Ind.....	110 North Illinois Street	Toledo, Ohio.....	420 Madison Avenue
Jackson, Mich.....	212 Michigan Avenue, West	Tulsa, Okla.....	409 South Boston Street
Jacksonville, Fla.....	237 West Forsyth Street	Utica, N. Y.....	258 Genesee Street
Kansas City, Mo.....	106 West Fourteenth Street	Washburn, D. C.....	806 Fifteenth Street, Northwest
Knoxville, Tenn.....	602 South Gay Street	Waterbury, Conn.....	72 West Liberty Street
Los Angeles, Calif.....	5201 Santa Fe Avenue	Wichita, Kan.....	116 South Main Street
Louisville, Ky.....	455 South Fourth Street	Worcester, Mass.....	165 Commercial Street
Memphis, Tenn.....	8 North Third Street	Youngstown, Ohio.....	25 East Boardman Street
Milwaukee, Wis.....	940 West St. Paul Avenue		

Canada: Canadian General Electric Company, Ltd., Toronto

Hawaii: W. A. Ramsay, Ltd., Honolulu

Motor Dealers and Lamp Agencies in all large cities and towns

SERVICE SHOPS

Atlanta, Ga.....	496 Glenn Street, Southwest	Milwaukee, Wis.....	940 West St. Paul Avenue
Buffalo, N. Y.....	318 Urban Street	Minneapolis, Minn.....	410 Third Avenue, North
Chicago, Ill.....	509 East Illinois Street	New York, N. Y.....	416 West Thirteenth Street
Cincinnati, Ohio.....	215 West Third Street	Philadelphia, Pa.....	429 North Seventh Street
Cleveland, Ohio.....	4966 Woodland Avenue	Pittsburgh, Pa.....	16 Terminal Way
Dallas, Texas.....	1801 North Lamar Street	St. Louis, Mo.....	1110 Delmar Boulevard
Detroit, Mich.....	5950 Third Avenue	Salt Lake City, Utah.....	360 West Second South Street
Houston, Texas.....	5 North Milam Street	San Francisco, Calif.....	361 Bryant Street
Kansas City, Mo.....	819 East Nineteenth Street	Seattle, Wash.....	1508 Fourth Avenue, South
Los Angeles, Calif.....	5203 Santa Fe Avenue		

Special service divisions are also maintained at the following Works of the Company: Erie, Pa.; Ft. Wayne, Ind.; Pittsfield, Mass.; Schenectady, N. Y.; and West Lynn, Mass. (River Works and West Lynn Works).

INTERNATIONAL GENERAL ELECTRIC COMPANY, INC.

Executive Offices: 570 Lexington Avenue, New York City SCHENECTADY, N. Y.

Cable Address: "Ingenetric New York"

PRINCIPAL FOREIGN OFFICES, ASSOCIATED COMPANIES, AND AGENTS

ARGENTINA: General Electric, S.A., Buenos Aires and Rosario	INDIA: International General Electric Company (India), Ltd., Bombay
AUSTRALIA: Associated General Electric Ltd., Sydney and Melbourne	ITALY AND COLONIES: Compagnia Generale Di Eletticit�, Milan
BELGIUM AND COLONIES: Soci�t� d'Electricit� et de M�canique (Proc�des Thomson-Houston & Carels), Brussels, Belgium	JAPAN: Shibaura Engineering Works, Tokyo; Tokyo Electric Company, Ltd., Kawasaki, Kanagawa-Ken; International General Electric Co., Inc., Tokyo
BRAZIL: General Electric, S.A., Rio de Janeiro, Sao Paulo, Lojas General Electric, S.A., Rio de Janeiro	JAVA: International General Electric Co., Inc., Batavia
CHILE: International Machinery Company, Santiago, Antofagasta, and Valparaiso	MEXICO: General Electric, S.A., Mexico City
CHINA: Andersen, Meyer & Company, Ltd., Shanghai; China General Edison Company, Shanghai	NEWFOUNDLAND: International General Electric Co., Inc., St. Johns
COLOMBIA: International General Electric, S.A., Barranquilla, Bogota, Medellin, and Cali	NEW ZEALAND: National Electrical and Engineering Company, Ltd., Auckland and Wellington
CUBA: General Electric Company of Cuba, Havana	PARAGUAY: General Electric, S.A., Buenos Aires, Argentina
ECUADOR: Guayaquil Agencies Co., Guayaquil	PERU: International Machinery Co., Lima
EGYPT: British Thomson-Houston Company, Ltd., Cairo	PHILIPPINE ISLANDS: General Electric (P.I.) Incorporated, Manila
FRANCE AND COLONIES: Compagnie Francaise Thomson-Houston, Paris, International General Electric Co., Inc., Paris; Compagnie Des Lampes, Paris	PORTUGAL AND COLONIES: Sociedade Iberica de Constru��es Electricas Lda., Lisbon
GERMANY: International General Electric Co., Inc., 4, Alexander Ufer, Berlin, N. W., 40	PUERTO RICO: International General Electric Company of Porto Rico, San Juan
GREAT BRITAIN AND IRELAND: International General Electric Co. of New York, Ltd., London; Associated Electrical Industries, Ltd., London	SOUTH AFRICA: South African General Electric Company, Ltd., Johannesburg and Capetown
GREECE AND COLONIES: Compagnie Francaise Thomson-Houston, Paris, France	SPAIN AND COLONIES: Geathom, S.A., Madrid and Barcelona; Sociedad Iberica de Construcciones Electricas, Madrid and Barcelona
HOLLAND: Mijnssem& Co., Amsterdam	SWITZERLAND: Trolliet Freres, Geneva
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